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Special issue celebrating the First International Orchid Conference by the Orchid Society of Papua New Guinea

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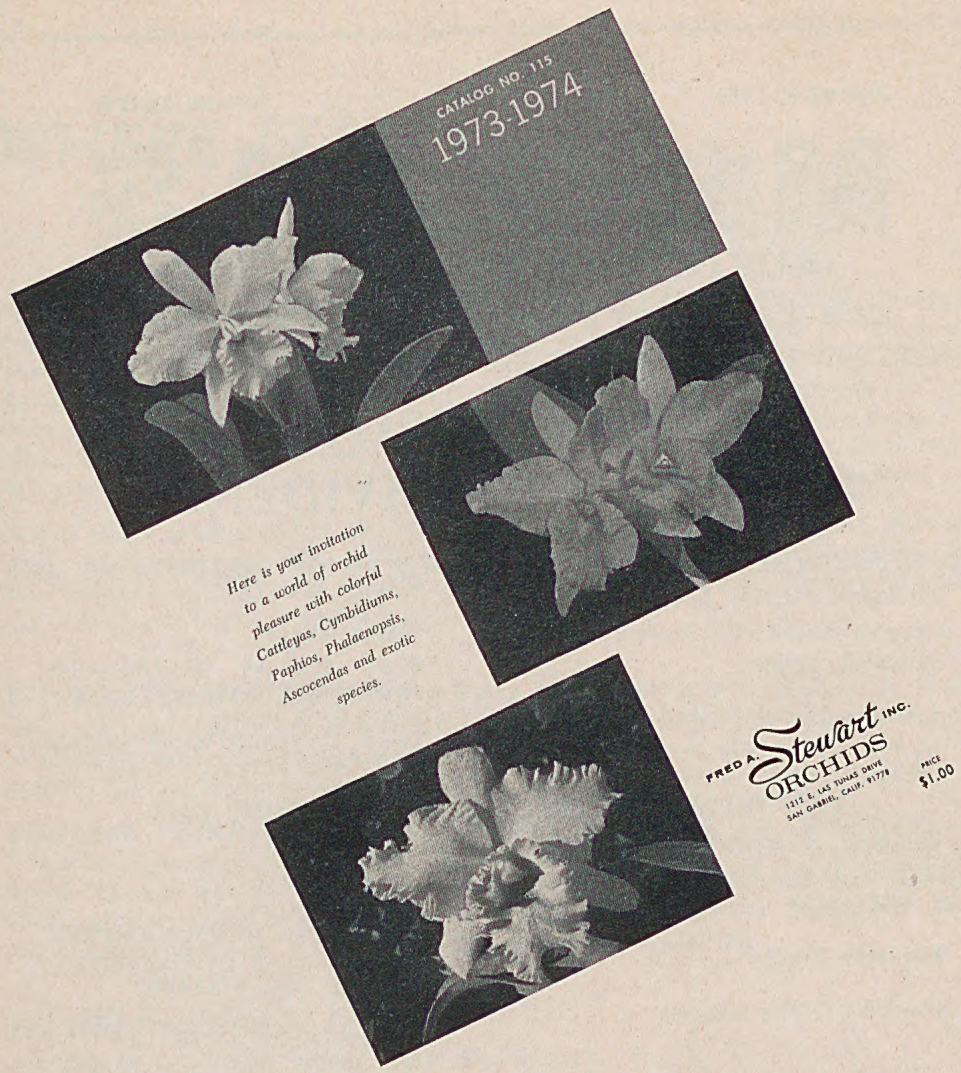
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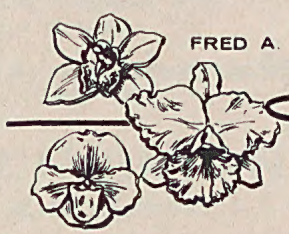
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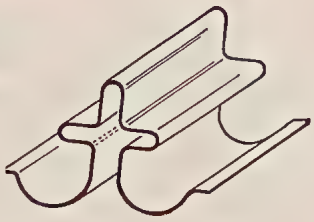
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Orchid names: A species of orchid has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

Mrs. Andree Millar, on page 21, describes *Dendrobium bracteosum* as the best all-round New Guinea orchid for colour, fascinating variations, and long life. It is easily grown under conditions suitable for Hardcanes. The specimens illustrated were photographed by Ronald Kerr growing on a frangipani tree in a Port Moresby garden.

NEW GUINEA ISSUE

Introduction by His Honour The Administrator, Mr. L. W. Johnson, for Special Issue of "Australian Orchid Review"—March 1973

It gives me much pleasure to have the opportunity of writing a short introduction to this special issue of the "Australian Orchid Review", the issue of which will coincide with Papua New Guinea's first International Orchid Conference.

As Patron of the Orchid Society of Papua New Guinea, I have watched the growth of the Society with deep interest. It is encouraging to see a number of our young students joining the Society and taking part in the seed flasking experiments. Flask culture, among other things, also means preservation of the species, an aspect of our development which is of very real concern to our Society.

We feel that with our wealth of orchid flora we have the means of creating a very profitable industry for this developing country. We look forward to the forthcoming Conference and the gathering of orchid lovers from all parts of Papua New Guinea, Australia, New Zealand and elsewhere. We are proud to have them as our guests and assure them of a warm welcome in Port Moresby.

L. W. JOHNSON,
Administrator.

This is Papua New Guinea

Papua New Guinea covers an area of nearly 200,000 square miles and includes about half of the island of New Guinea and all the islands of New Britain, New Ireland and Bougainville and numerous offshore islands and atolls.

This environment is the most diverse and richest orchid area in the world. Here the huge genus *Dendrobium* reaches its peak in range of species and quantity of plants, and the almost-as-large genus *Bulbophyllum* amazes with extraordinary flower shapes and colours. Altogether there are about 130 genera and more than 1800 species.

The people, of whom there are more than two million are pleasant and have a natural dignity. As yet the development of a sense of national unity has been inhibited by 630 different languages but rapid progress to self-government is altering this.

The *Lingua franca* is Pidgin which is a language in its own right capable of great expressiveness. Thus *Yu go lukim Nugini painum naispela pulpul* means *You go and see New Guinea to find beautiful flowers.*

First International Orchid Show

For a Society little more than a year old to stage an International Orchid Show must be something of a record worthy of being immortalised in orchid annals.

Registrants from Australia and New Zealand and odd points around the Pacific will be participating in a significant event. Worthy not merely in its own right but because it marks a big step towards maturity by a young nation.

Success of the Conference organisation is due to co-operation by all members of the Orchid Society of Papua New Guinea. There is a significant number of locally born members and this number is growing. The pleasures of growing beautiful plants is universal.

The Conference takes place from 23rd to 26th March. Visitor registrants have a unique opportunity to meet New Guineans and see their wonderful country.

A programme of lectures and social activities is centred around a fine Show.

Post Conference tours are arranged covering such interesting orchid country as Tapini, Garaina, Bulolo, and the beautiful ports of Port Moresby, Madang and Lae.

Many Local Members

The Orchid Society of Papua New Guinea is just a year old and we can look back with pride on our first year's work. If we seem to have been in a hurry, it is because we were so late starting. So many obstacles to push aside and so many people to get together in the right place at the same time.

However, we think it is worthy to note that we now have 12 Papua New Guinea members. These are: Mr. A. Amos, Mr. and Mrs. E. Tuen, Mr. O. Omucan, Mr. G. Sigalogo, Mr. W. Paia, Mr. S. Kanomon, Mr. K. Boski, Mr. P. Kup-Ogut, Mr. P. Anis and Mr. A. Minjio, our newest member from Lae.

A lot of the success of our display for the Orchid Show will be due to the students who have worked so hard for the last six weeks, collecting and potting up orchids for the show. To all of them, we say welcome, and we feel confident that you will carry on the work of the Society in the years to come.

Orchid Society of Papua New Guinea

ANDREE MILLAR

Mrs. Millar is honorary secretary of the Society and Curator of the University of Papua New Guinea Gardens.

The Orchid Society of Papua New Guinea is the direct result of the dedicated love for orchids of three of the most unassuming men in Papua New Guinea . . . Peter Luxford, Alan Martin and Jim Tolbert.

They developed a love for our native species, and over the years, spent most of their week-ends walking, climbing, slipping and falling over any part of the Central District of Port Moresby they could reach by motor vehicle, boat or, mostly, on their own flat feet. They would walk miles in the most inhospitable country just to see if a minute *Taeniophyllum* was flowering as it had done the year before. Never once did they collect in the usual criminal fashion; just what they needed for their own collections, and they would send me one for Lae Botanic Gardens. They had no scientific knowledge of orchid terms, and, while this did not worry them, they felt they would like to learn.

Consequently my mail often had a bulky parcel; there would be a plant, a beautifully drawn picture of the flower and segments, usually a dried specimen to go with it, and often a picture. Over the years, many a herbarium specimen went into the national herbarium because of these three . . . the Three Musketeers . . . so called because they sallied forth together in search of orchids, one for all if they could find three, if not, all for one.

About twenty-five minutes after I arrived in Port Moresby, the Three Musketeers were on my new door step: "How about an orchid society?"

And so it was.

The first meeting was held at my home to discuss the formation of an Orchid Society of Papua New Guinea. This was at 8 o'clock on the evening of Wednesday, December 1, 1971. There were eight of us there, the Three Musketeers (and Jenny Tolbert), Graham and Rita Garland, Cliff Southwell and I. We decided to have the inaugural meeting of the Society on the 5th January, at which we duly elected our office bearers, decided to cut as many corners as possible as we figure we were about 20 years too late. Graham Garland was elected President. We elected Geoff Elworthy as one Patron immediately, and wrote to the Administrator to be the other . . . which he accepted.

We then held our first plant judging (as we had all brought flowering plants along) and asked Canon Cruttwell to be the judge. We had to do this to keep him out of it, as he had brought some gems in from his Highland station which would have knocked spots off ours if they were allowed to compete. So we honoured him by asking him to judge, and then we duly admired his plants . . . a bit of smart thinking on our parts, we felt. So that was our January meeting.

We decided to produce a monthly newsletter, and try to draw and describe one or two of our native orchids each time. We decided on educational articles but felt that as we were a bunch of amateurs who loved orchids for their own sake and not for honour and glory, we would not mind if we did not know botanical terms as long as we knew how to treat our orchids. And this we achieved because so many of us had grown our native orchids for years.

In February we began arguing about the best design for a badge, and eventually we accepted Canon Cruttwell's idea of *Dendrobium johnsoniae*. The badge is very attractive, with a white flower on a red ground, and a gold circle. Each member has his name on the badge so that there is no guessing who is who . . . unless you are short-sighted.

About this time we received the first of many gifts . . . seedlings from Dr. Grey Channon.

By March we were planning to send an exhibit down to the Queensland Autumn Show. *Bulbophyllum macrobulbum*, as we then thought it was, was flowering with a mighty bad smell, but looking very magnificent with it, so we made it Orchid of the Month. Now we know that what we thought was *Macrobulbum* was really *Bulbophyllum fletcherianum*, and now, thanks to Angus Hutton, we have some of our own.

We had our first field day at Eilogo Plantation . . . 20 members turned out led by the Three Musketeers, and we had a fabulous time collecting orchids off the old rubber trees (*Hevea braziliansis*, the commercial rubber). Of course, we gathered at lunch time (minus the Three Musketeers, who had gone off up an impossible mountain looking for their beloved little terrestrials) to discuss our loot. We had collected 10 different species, and finished a glorious day at Woody's Pub, on the top of Rouna Falls, with hot chips and lolly(?) water.

In April we went to Brisbane with our display and they were nice enough to give us a Gold Medal. The Queensland Society sponsored us for the Australian Orchid Council membership, Mr. Smoothey of Sydney paid our subs to it for two years, and we were really overwhelmed with all the kindness and orchid friendship offered to us. We were also bucked to find our membership had gone up to 60 . . . it is now 140.

By this time members were writing in for the newsletter . . . we had a story about the Orchids of the Ramu from member Pike in Madang; Neville Howcroft wrote about the Orchid Family at Lake Iviva and we had run a short course on what orchid grows where in Papua New Guinea. Cultural notes were beginning to be a feature of the newsletter.

In June we began talking about holding an International Show and hoping our orchid friends would come to see us; we were invited to join the American Orchid Society and we wrote in the June letter what it would mean for us to do so. We were sent a report of the New Guinea Biological Foundation, and we printed the orchid part in our newsletter. We also answered some pathetic pleas from members on how to tell what genus was what. I'm not sure if it helped or not, but the members stayed enthusiastic.

Geoff Elworthy had departed for two years' gadding around the world and we were just beginning to realise how much of a loss he was. We had very special visitors in September, Gerald and Nell McCraith from Melbourne. They stayed three weeks with us, showed slides, answered our thousands of questions, and everybody learnt a lot, gained a lot, and made two valued friends.

We began our now famous casserole nights . . . ladies bring a casserole, the hostess of the night cooks the rice, the gentlemen bring the lolly water and we talked orchids while we ate. Gerald and Nell were our first guests at this kind of night, but now we like them so much we have about every second meeting in this fashion. Every third meeting is a Field Day, and the first in the three is an official meeting.

This month too we had Dr. Joseph Arditti who gave us a magnificent talk on 'Sex and the Single Orchid'. Now all our gentlemen members raise their hats when they pass a lady orchid. Joe was a fabulous visitor . . . our President David took him to the Brown River collecting and he captured a few of his own. We do hope he comes back again.

In September also we went to Eilogo for a morning's collecting and came back to Woody's for a luncheoen . . . Woody is a member (Dorothy Woody on the electoral roll but few people know that . . . she is just our beloved Woody who helps everybody and every club. We are glad to have her as a member.).

By this time we had changed Presidents . . . Graham and Rita Garland were transferred to Indonesia, and only when they were gone did we realise how much our Society owed to this couple. Everyone of us looks forward to the day when we meet the Garlands again. David Dowd was elected President in Graham's place and Peter Luxford became treasurer, in place of Rita.

In October, our big thing was a Field Day to Lake Sirinumu . . . about 50 of us, including junior members, went along, by courtesy of the Electricity Commission. We drove to the Lake . . . which is a wonderful valley flooded by the Electricity Commission for our hydro-electric works. We had three motor boats but two broke down, and we had to paddle back to base . . . thankfully the water was so low we were not washed over the top of the weir. Still we managed to collect some beautiful orchids, including *Dendrobium nindii*, and Bill Wiggle is still big-headed over his *Ascoglossum calopterum* find.

Our big moment in November was the Casserole Night at the Secretary's home when we farewelled Alan Martin . . . the second of the two Musketeers to go. Chris and Peter Sheedy gave us six priceless volumes of 'The Orchid World', dating back to the 1900's. If anything happens to us in the political turmoil, then they go to the University Library, along with the rest of our books.

We went into a sort of recess at Christmas time, and instead of formal meetings we had collecting forays. So many of our members are on the Medical Faculty and away on six weeks' leave during Christmas and January that our next meeting is on the second Tuesday in February, when we shall talk . . . Show . . . Show.

The magic round of orchids in Papua New Guinea

DAVID DOWD and ANDREE MILLAR

President David Dowd says: The Orchid Society is now attracting a growing number of local members, and this is a good omen for the future. We are also finding double the fun in our meetings in showing these young men how to enjoy orchids . . . although their country is so rich in orchids it is only now that they are moving into permanent homes in suburbs of the larger towns, that they are learning the richness of this hobby.

Some of our local members are working in horticulture fulltime in the University Gardens and Lae Botanic Gardens, and like so many gardeners, they can carry their work over into their hobby. For others, it is, as yet, only a consuming interest.

Over the University vacation, several students of the University of Papua New Guinea have been working in the Gardens with Andree Millar and at their own request were put on to orchid work.

Among our student members we have Paul Kup-Ogut who is doing Science and is keen to specialise in orchids after graduation. Maybe here we have an answer to who comes after Schlecter. From the Law Faculty comes Gerard Sigalogo whose home is in New Ireland. The Arts Faculty has its orchid enthusiasts too; Simon Kanoman from Manus Island, Pedi Anus from New Ireland, and Warren Paia, in Economics, who comes from the British Solomon Islands.

One of the preliminary year students, Boski Kapinias, has also been showing great interest, and on his vacation this year, collected and sent back at his own expense a box of orchids for the University collection.

These men, all students, have shown a great interest in Andree Millar's dream of an orchid business, and are helping her set up gardens in no-covenant areas for a cut flower trade. My wife Dorothy is teaching the students flasking. We have several flasks already showing beautifully green and some mould, we haste to say. Selecting of special plants and pollinating is done by the student under Andree's direction.

We have other local members who are not students . . . Elei Tuen, Ombas Omucan, Mathew Masupa, Kofa Loumi and Amos Anio, all working in the University Gardens, are very knowledgeable; as is Anos Minjio of Lae (who is Senior Assistant in the Lae Gardens). All members who know a lot, come on our field days, and usually, I might add, find the best plants.

Andree Millar says: One of the loveliest collections of orchids in the whole wide world is in Lae Botanic Gardens. When I came down from Bulolo in 1955, I brought with me the collection I had amassed there, and which was justly famous as the only really large collection of native species in the country. This was made possible by John Womersley, then as now, Chief Division of Botany, who took me on the official patrols as orchidologist

and who sent up to me any other plants he collected.

When it got too big to handle, we decided to move to Lae . . . me to the Botanic Gardens and my husband to a cocoa plantation. From this plantation we collected almost every orchid in the Markham Valley, thanks to my husband, who as he cleared land for cocoa, had the orchids collected for us. When he died and my children were both south at University and boarding school, the orchid collection became my life.

Lots of people added to that collection. Lou Searle gave us all his beautiful native **Ceratobium dendrobiums** when he left Talasea and went to the Highlands to work for D.A.S.F. Lou, incidentally, is now doing for **Rhododendrons** in the Highlands what he did for orchids on the coast, and it is a dedicated work of collecting and growing, and now he works with both Lae Herbarium and Reijks Herbarium (Holland), all his hours of work, free.

Neville Howcroft of Bulolo Forestry and Ian Pendergast of Daru (D.A.S.F.) also send in every new find.

But, of course, the great thing that happened to Lae is that the famous Arawa collection of Kip McKillop came to Lae when the Administration purchased his plantation for the new town of Arawa. In a total of four weeks (adding together three visits) I, with the help of Ombas Omucan and Elei Tuen, moved some 56,000 orchids.

It was here we invented the idea of forests of teak posts and we spent hours and hours, days and weeks, cleaning, sorting and typing those plants on the posts.

There are exotics, of course, **Cattleyas** and **Oncidiums** and **Epidendrums** and such, but the glories were the selected plants of our best species **Ceratobiums,** and dozens and dozens of plants of so many hybrids based on our native species.

The collection is magnificent. Sadly, none of the hybrids are named so they can only be a beautiful attraction for tourists. We must start again to remake these hybrids, and helping us is that most generous of men, Hermon Slade.

David Dowd again: It is my pleasure to write a paragraph about the University Gardens, and the truly magnificent collection of orchids established in just two years by our secretary, Andree.

At this time of the year, as at almost any time, visitors to the orchid garden at the University of Papua New Guinea will find a wonderful variety of orchids in bloom that are almost certain to be new to them.

My wife and I take our children there almost every week of the year, but now in early February as I write this, with an eight month drought just breaking, the whole collection is alive with growth.

Dozens of teak posts are covered with orchids now coming into bloom and they should be magnificent at Show time. Some splendid forms of **Dendrobium ostrinoglossum** took my eye last week and should prove worthwhile parents with their brilliant purple-red colours, upstanding forms and solid textures. These are, I am told, the ones called 'May River Reds'. When the whole post of these are out, the effect is stunning.

On nearby posts, masses of **Dendrobium williamsinaum** and **Dendrobium discolor** are bursting with buds for an amazing display shortly. The spikes are coming thick and fast. In little corners of the collection one always comes across treasures that need to be looked for: A strange **bulbophyllum** perhaps, with a sweet perfume; maybe a **dendrobium** flower on a five foot cane or a stem of minute **phreatia** flowers only properly appreciated with a magnifier (which we always take with us). Some of the best of these treasures are one-day wonders, particularly the many **Diplocaulobiums,** on which it seems that every one of dozens of flowers on the same plants will all open on the same day, and be gone by night.

Frequently Andree will ring up for an urgent visit to see and photograph one of these to add to the growing collection of colour slides being assembled by the Society. When Joe Arditti from California spared us one day on his magic carpet visit he managed to find 40 species in flower at once . . . much simpler than walking our forests to find them.

Andree Millar again: One of the wonders of the orchid world in Papua New Guinea is Phil Scully's Frangipani tree in his garden at Lae. It is literally loaded with orchids and **Bromeliads** and other lovely epiphytes.

There are branches laden with young plants of one species . . . these he sprayed onto the bark and they grew. Other babies he bound on with grafting tape and they sit up and flower like the beauties they are.

Phil's Vandas beat anyone else's in Lae. They grow straight and tall, and flower magnificently. Just to see his beautiful row of hundreds of **Vanda** Dianas, pristine white and beautifully shaped is enough to make an orchidist's day.

On Bougainville there are two of the best orchid folk in the world . . . lovely garden, lovely home, lovely people . . . in fact, when Alistair Morrison of England visited us, we sent him down to Sandy and Joan Sandford. He came back and said one word: "Fabulous."

The Sandfords have a beautiful collection of native orchids and Vandas . . . their home when the Bougainville Whites **(Dendrobium gouldii)** are out, is lovely beyond belief. If you did not see this place with your own eyes, you would not believe it, but you stand on the verandah, look over the orchids through the Casuarina trees to the sea . . . waves breaking on a white beach, and, always the moon comes up over the house.

Sandy grows orchids like he does everything else . . . with a tropical air of making it look darned easy, when actually he works really hard. He cares for his plants, feeds and sprays, and as he has always done, takes the flowers to Joan when they come out.

If the Sandfords sound as if they live in Shangri-la . . . they do. But they make it so.

In Bulolo there's Neville Howcroft who patiently draws and describes his finds. He hasn't got a gigantic collection, but every one he collected himself. The joy of Neville's garden is his terrestrials . . . **Calanthes** and **Phaius** and **Spathoglotis** that no one ever found before.

From the Buntings in Vanimo to Elsa Doyle at Buka Passage, wherever there are orchids, here in Papua New Guinea there are orchid lovers. And orchids to love.

We like to bring 'em back alive

Written by members of the Orchid Society of Papua New Guinea

Whenever a new member of the Orchid Society of Papua New Guinea gets to meet Bill Wiggle, he is almost immediately told how he got his favourite

ASCOGLOSSUM CALOPTERUM

On a field trip to Lake Sirinumu (says Bill), I was in a party that sailed across the lower end of the lake, went ashore, and started collecting from the scrubby trees that grew in the kunai grass.

In a place that was fairly densely wooded, I looked up and saw this orchid . . . it was hanging down from a branch in the shape of a 'U'. It wasn't hard to get down once I got up to it . . . it came off the tree very easily, and it had long aerial roots with very unusual brownish-red tips.

The leaves were dark green on top with a purplish tinge below and the whole plant looked like an elongated strap leaf Vanda. It was something I had never seen before and unfortunately it was in seed. We could see where the many flowers had been.

When we finally gathered up all our collections and sailed back to the landing place, I held up my plant. Even the 'Old Guards' like Peter Luxford and Andree Millar congratulated me, for I had found *Ascoglossum calopterum*.

I learned then that it has a beautiful branching inflorescence of rich purple flowers, each about half an inch long. It is not common . . . or perhaps I should say, its inaccessible haunts make its collection something of an occasion. I feel very proud of myself that I snaffled the prize of the day.

We are attempting to grow the seeds in agar, but so far no germination has shown up. However, I still have my plant.

DENDROBIUM DISCOLOR

President of the P.N.G. Society, David Dowd, says: "Since we bought our first orchid, a plant of *Dendrobium discolor,* at Sogeri Market, not long after we came here, this orchid has become one of our favourites. We paid 10 cents for this plant and we have had 10 dollars worth of fun out of it . . . However, I should say that I did not personally get that first plant . . . my six year old son beat me to it, and he is not still waiting anxiously for its first flowers.

This Dendrobium of the Ceratobium section is often called the Moresby Orchid because almost every house has one or two on a tree. It has masses of flowers and is the most variable orchid I have seen here. Growth habit differs with localities, from long six-foot canes on the coast and in the big trees, to short sturdy clumps of many canes under two feet on the hot rocky cliffs above Sogeri.

We have collected them now in several areas, and each seems to be a little different from the others. So far the best and strongest in my collection have come from the bush behind a small village, Kapari, about 140 miles eastwards along the coast from Port Moresby.

Dorothy (my wife) was there last July and brought back several plants with canes about four feet long. These have grown vigorously and now have plenty of flower stems with well-formed flowers, with rather less twist than some of the varieties. These are a very nice yellow with an attractive purple lip.

In other areas, we have collected forms in several shades of brown, fawn and almost orange, some with even colour, and others with broken colour.

An advantage of these plants in Moresby is their ability to thrive in our long dry season. We are growing them on teak posts, frangipani trees and rain trees. On all these supports they root quickly and soon make excellent new growths. I'm hoping to fill our three large rain trees with this and other related species. The effect should be something worth waiting for.

BULBOPHYLLUMS

Peter Luxford went south and the orchid world laid themselves out to impress him . . . we, of course, could have told them it had to be little and it had to be a Bulbophyllum, but here is his reaction.

My companion said (says Peter), "Ooh!! Look at that beautiful Cattleya and look at the Cymbidium," and away she went looking all round the nursery at the biggest and best hybrids she could find.

"Stupid," I thought to myself, "what fun is there in growing these." I had been dragged to this nursery full of gaudy hybrids, many coloured catts and cymbids of multiple shades, but heck . . . to me there was no difference in them, they all looked the same. In my mind I compared these flowers on show in front of me, in fact all around me, all regular, all perfect . . . and then I thought of my own little Bulbophyllums a thousand miles away and wished I was with them . . . with my own little purple and light-spotted "duckshead" bulbophyllum which should be out now, and my large *Bulbophyllum grandiflorum,* in bud when I left and probably fully out now.

With a gentle sigh, I tried to return my attention to my hosts, but it was no good. Orchids to me are my own lovely Bulbophyllums. At first, when I collected these little Bulbos, I never could grow them. I can remember a time when we (The Three Musketeers) collected four different variations of the one species within a 50 yards radius, as well as half a dozen other species. We sat down under the rubber trees and just gloated. Some of the flowers were short lived; they lasted a day or two or three, not these dazzling, cabbage size hybrids, but each one so tiny, so perfect.

I once took a friend collecting with me, and he immediately put his big foot on an orchid . . . he was very humble after he had done it, and opened his eyes a bit more. He was so amazed that orchids grew outside heated glasshouses, he couldn't see for looking. He reminded me how lucky I was to live in a land so rich in orchids, and over the years, we realise that we were indeed lucky to live in a land with so much orchid wealth around us.

I found my first Bulbophyllum at about 2000' and took it home and carefully killed it with love and attention. I regret to say, in those days, I killed many of these Bulbos that way. I could grow anything epiphytic that was not a Bulbophyllum, and

we collected some beautiful species that for some reason we could never find again.

They really are an amazing family group, with their various shapes . . . formal, star-shaped and ducksheads. Dissecting one of these flowers is amazing; the sepals have so mixed up evolution that they appear as anything but a sepal . . . a knob, a web, or an almost invisible thread. The same goes for the petals. I have a plant that is barely one and a half inches high to the top of the leaf, and this has a two petalled flower, and the lip is a feathered tongue that flips through a one hundred and eighty degrees flap constantly at the slightest breeze and almost quicker than the eye can see.

The 'tongues' of these orchids are a fascinating subject to study as they vary as much as the flowers do, and from an insect's point of view doing the pollinating of the trigger type of labellum of some species must take a lot of the "sex" out of pollination and make it darned hard work, in spite of what Dr. Joe Aditti told us about 'Sex and the Single Orchid'.

Not all Bulbos are single flowers . . . some have six bracketed off the same inflorescence and the flowers are shaped like a minute slipper orchid.

Then, of course, the group headed by the newly discovered genuine *Bulbophyllum macrobulbum* (for which we thank Angus Hutton of Garaina) and *Bulbophyllum fletcherianum* . . . the latter with its large cluster of large flowers and its large smell.

Well, I'm home again from my trip through the hybrids nurseries . . . I look at my Bulbophyllums and I say . . . "You beauts!"

DENDROBIUM BRACTEOSUM

Well, this is me, Andree Millar, and of all the orchids in this happy land, I love the Bracteosums best . . . *Dendrobium bracteosum.* They come from little plants a few inches high, with the stems clustered with tight bunches of flowers in all shades of pink and red, to the white and yellowish ones.

Ever since I went to the 6th W.O.C. and saw what Australia was doing with its minute *Dendrobium kingianum,* I thought it could be done with *Dendrobium bracteosum.* So I began collecting the plants and the colour and size and varieties.

This is an orchid, that if it lived as a human in a school giving awards for the best all-rounder . . . it would win every time. It is best at long lasting . . . often the flower cluster lasts for at least seven months. It wins in colour variation . . . from deep purplish red through all shades to the most delicate pure pink, mauve and from white through to yellow. It carries off points for being easy to grow . . . if you forget to water it . . . either you or the heavens above, the pseudo-bulbs get stringy, but the flowers still come out.

It is the most exciting orchid to collect . . . it grows in the tops of tall forest trees from Sogeri to the Markham River to Keravat. It grows on trees overhanging the beaches on innumerable jewelled islands all around the coasts, so that collecting it is a continuing marvel . . . I find myself saying again and again . . ."Just imagine getting PAID to do this."

The plants vary between five and eighteen inches high depending on their locality. Leaves are dark green, alternate and with a lovely soft yet firm texture. The flowers in clusters of up to 60 . . . sadly they have no scent . . . but, hey? Who needs scent when one looks so lovely for so many months?

I hope to cross and re-cross on my plants; I want a better looking plant. I want a pure white and a deep red. I want to have these plants in thousands: can you imagine them running up the branches of a frangipani tree? or a Calabash tree?

Yes, I think there is a future in *Dendrobium bracteosum;* I think we can make loveliness more lovely yet; I think we can bring these plants within the reach of anyone who loves miniatures that flower constantly.

I have about 20 colour variations from light to dark pinks, some whites and a yellowish one. I hope to get down to the islands in Milne Bay this year and collect a lot more stock plants. Wish me luck.

BOOK REVIEW

Kembang Anggerik

This is a very interesting little book by Mr. S. M. Latif who has been carrying on the tradition and work of the famous Bogor Botanic Gardens established first by the Dutch when they were in Indonesia.

The book has been produced entirely in Indonesia apparently on a small budget, but in spite of the obviously inexpensive paper the printing is excellent. While all the illustrations are drawings they show apt points of culture and generic differences extremely well. Many of them are by Mr. Latiff's originals but he has copied, with due acknowledgement, where appropriate from Williams, J. J. Smith (his great predecessor), and "De Orchidee".

The text is in Indonesian but every few pages three columns show Indonesian, Dutch and English equivalents. This, plus the fact that all orchid names are correctly latinised, makes it possible to follow the text. In fact, it becomes a fascinating exercise to do so.

We learn from the first list on page 7 that "kembang" is multiply and page 9 shows that "Anggerik" means Orchidaceae. A fair translation of "Kembang Anggerik" therefore is "Propagation of Orchids" and the book can be of value to any grower anywhere. However it will certainly be of use to any grower in Indonesia and Mr. Latif has rendered a great service to his countrymen.

It has been said that the survival of *Phalaenopsis amablis* in Java is due in large measure to villagers establishing it on trees and posts around their homes. The instinct to grow beautiful things for their own sake is as strong with our friendly northern neighbours as it is with us and Mr. Latif is to be congratulated for explaining culture so admirably.

The publishers are: Penerbit, N. V. Masa Baru, Bandung, Djakarta, Indonesia. No price was given with this review copy but $2 should cover the cost and mailing. This book is recommended to collectors of the unusual.

Vandopsis muelleri—we found it!

ANDREE MILLAR



Party triumphant! The intrepid collectors, Matthew Masupa, official plant collector for the University, and students Warren Paia, Gerard Sigalogo and Simon Kanomon, who with Mr. Amos Anio, located *Vandopsis muelleri*. In the background is part of the orchid section of the University Gardens.

One of our members in the *Orchid Society of Papua New Guinea,* Peter Luxford, came charging into my office (early in January last) holding what appeared to be a ten-foot stick, branching in all directions and with a hundred or so two-inch wide golden brown orchid flowers on it. The story behind it is, that Peter and his family have a holiday cottage on top of the Bluff at Sogeri, about 20-odd miles from Port Moresby. At some stage in his orchid collecting career, date uncertain, but in the last ten years, Peter had found this plant growing on the rocks, taken it back to his garden, and forgot about it. It did not flower, just kept growing larger leaves, and so the years went by, until January 1973 when the children discovered it in flower. He brought the flower to me, and so at last, I got close to the mythical (up to then) *Vandopsis muelleri.*

This I had to find myself and the more I thought about it, the more I was sure that on the cliffs above the Laloki River, in the Rouna Falls area, this fantastic orchid ought to be found.

During the long Christmas holidays, I have had the good fortune to have several of the students at the University volunteer to work for me. At the present time I have three with me . . . Warren Paia from the British Solomon Islands, Gerard Sigalogo, from New Ireland, and Simon Kanomon from Manus Island. These three, together with Matthew Masupa from the Northern District of Papua (my plant collector) and Amos Anio, my senior driver, who comes from Morobe District, talked the project over with me. I was absolutely tied to my desk and paper work, so I could only tell them what the plant looked like, and where I thought it might be found.

Vandopsis muelleri is not a small plant; it has the thickest and most leathery leaves of any orchid I know; it grows in strap leaf *Vanda* fashion, and the individual leaves reach up to eight feet long. It grows on the most inaccessible of rock faces, in the most inhospitable of country. The tough roots bury themselves in



Mrs. Millar and Vandopsis muelleri

cracks in the rock, and in places crawl over the rock and back under it. Prizing one of these huge plants loose is a herculean task, particularly if it has a 12 feet flowering stalk towering over it and you have been told: If you DO find one, and it IS in flower, you will be eaten without salt if you break it.

We discussed what we knew of the plant; and the written information is very meagre indeed. We knew it grew in the rock country above the river and that it must be in hidden gullies because we had never seen it from the road, or on forays close to the road. We decided they should go to the bridge by the Rouna Falls Power Station, climb down the rocks to the river bank (which is only a trickle in the dry weather, but a rushing torrent in the wet season, when it hurtles down to join the main Laloki), and then walk downstream for half an hour.

They were to ignore the *Vandopsis waroqueana,* the *Renanthera edelfeldtii,* the *Vanda hindsii, Dendrobium ophioglossum, Dendrobium acerosum, Dendrobium discolor* and any others that might be there to distract them. At the end of half an hour, they were to cross the river, and come back on the other side, studying the rock faces. There, I believed, in that rough country, among the huge boulders, the towering cliffs and sparse vegetation, they would find *Vandopsis muelleri.*

And they did.

I had told them to return to the office, no later than 2 p.m. About half past eleven, we in the Gardens heard our collecting vehicle come back and over the noise of the engine a jubilant chorus announcing their success. They had a dozen at least, large plants and some of them with flowering stems 10 feet high. We were almost speechless with delight, and the lads were so pleased with themselves . . . well, you can see their big smiles in the photo.

It was no mean feat to carry those plants up the steep cliff face, ford the river and then clamber back on to the road, and still get their long flowering stems back unbroken. As for the lads themselves, they were astonished that I could work out their probable habitat from the very meagre information we had on the species. In fact we indulged in quite a lot of slapping each other on the back, both psysically and verbally.

Now, of course, having got them back, we had to sit down and decide how to grow them. We put a few of the smaller ones into 14" pots. For the rest we decided to build a garden of rocks sit the plants among them, wedge them down with more rocks, and sit back and see what happens. So far, all is well, some of the newer flowering stems are continuing to grow and little side branches are developing buds. We have every hope that we will have a couple of pots with these extraordinary flowers out for display at our first International Orchid Show.

One of the very interesting growing habits of this orchid is that as the plants grow and the leading shoot grows upwards and bigger in every way, the base of the plant appears to grow backwards. From this, lots of small plants develop, as can be seen in the picture of the plant I am holding.

The plants as collected bear evidence of the rigorous climate. They are well able to stand up to this climate, but the leaves are blackened with sunburn and some plants that were young at the beginning of the south-easterilies are bent in the direction of the wind. The roots are as much as a quarter of an inch thick and very strong, and trap every fragment of mulch that falls onto them.

The inflorescence is, as I have said, about 10 feet long, and the stems are woody and dark brown to black. Each flower is about an inch and a quarter across, and the sepals and petals thick with slightly wavy edges. The basic colour is a warm gold and it is heavily marked with shining, tan brown. It has erect side lobes purple inside, and yellow on the back. The mid-lobe has bright purple keels, and in shape is as described for the genus. Altogether a very handsome and rather awe-inspiring orchid even in a land noted for its outsize and outstandingly beautiful flora.

Curator of University Gardens, T.P.N.G.,

The Butterfly and I

or, An experience with which you are probably familiar

G. HERMON SLADE

One of the most troublesome and elusive orchid pests, widespread in New Guinea, has so adapted itself to orchid flowers as its natural food, that it approaches fascination in a plaguing and devilishly annoying way.

The butterfly, *Hypolycaena danis,* is one of the family *Lycenidae* or "Blues", although this species is black and white with a few iridescent blue spots on the hind wings.

It is a very active, shapely and quite pretty medium-size butterfly, even rather lovely when pinned and labelled in a butterfly show case.

It recognises orchids seemingly as a family and lays its solitary spherical white eggs on indigenous and exotic orchids with equal relish. How it knows that a particular plant is an orchid when a garden collection of them covers so wide a variety of size, shape, colour and different genera is a puzzle; but recognise them it does, and to watch the active little fiend descend into a tree or area where one's beloved orchids are just coming into flower, arouses a feeling of considerable exasperation yet wonder how it recognises an orchid with its developing buds just in the precise stage for it to lay its eggs.

It does this as quickly and as definitely as the Cabbage Butterfly does, and places its eggs onto a developing inflorescence with the buds about four days off flowering.

It lays its white egg, which is the sole conspicuous part of its early life, under a bud so that it is well nigh hidden. The emerging tiny grub then crawls to the next bud on the spike, thus avoiding the tell-tale white egg sign that the larva is there. Now it promptly burrows into the developing bud and over the next 2-3 days, devours the inside. During this stage the grub grows into a slug-like creature about 6mm. long which takes on the precise colour of the orchid flower. If it feeds on a purple orchid the grub is purple itself; on rose coloured, it is rose; on blue, blue; and so on, being a very peculiar lurid white colour if it devours a white orchid. If it eats a greenish-brown flower (which is a complex colour in true fact), it camouflages itself with an array of typically orchid-colour marks, including tiny orchid-purple spots; it certainly does know orchids, their colours, and their pigments.

At this point the grub is as large as a small slug; it emerges from the now dying bud and proceeds to devour the ovaries of the developing raceme. It now has a colour so matching the buds, and so imitates the bud shape, that despite the havoc it works, it is nearly inconspicuous. It adds to its deception by remaining absolutely still, even when touched or examined; and the larva is seemingly blind. It can be handled and then looks and feels like a piece of dying bud, the latter being the result of its own depredation; so that the hanging vestiges of buds act as a decoy or a foil to predators.

Thus the insect can do very conspicuous damage yet can hide unbelievably effectively in the very forefront of the garden display.

Its final emergence from its chrysalis so opposite to its lethargic passive and hiding life this stage is also surprising. It has now become a very free flying, active, colourful butterfly, very adept at laying its solitary eggs solely on orchid flowers, maddingly persistent — Oh! I am starting to repeat myself, we are back again at the beginning of the story — after a lapse of about eight days.

N.S.W. ROYAL BOTANIC GARDENS AND NATIONAL HERBARIUM

Scientific Research Fund

The Editor,

I wish to draw to your attention this new fund for botanical research.

You will, I am sure, appreciate the need for continued research on our flora and that progress in this field has lagged far behind what we consider to be desirable. This new fund will be used to obtain specialised equipment essential for newly-developed methods of investigation and for other requirements of botanical research. I trust that, with the present increased interest in the environment and in our native species, this fund will be widely supported.

Donations to the fund may be made through the Director, Royal Botanic Gardens, or to the Department of Agriculture, and should be made payable to the Director-General of Agriculture. Donations of over two dollars ($2) are allowable income tax deductions.

(Dr.) L. A. S. Johnson,
Director & Chief Botanist.

STAR SPECIES

Dendrobium johnsoniae F. v. Muell.



Based on data in Orchid Society of P.N.G. Bulletin.

Photo: G. Hermon Slade.

In an issue inhibited by size it is impossible to describe every notable New Guinea orchid but there is one orchid which can symbolise the whole. It belongs to a section of Dendrobium called *Latourea* and this section, while extending to Java and some islands, is strongest in New Guinea.

Schlechter estimated that there were about 35 *Latourea* species known in 1915. Since then more have been discovered.

In this section *D. johnsoniae* is king size and queenly beautiful.

The plant may be up to 15 inches tall, and a well grown clone will have several canes with three to four leaves. These leaves are thin and leathery, mid-green in colour, and three to four inches long.

The pseudo-bulbs are thickened upwards from the base — a characteristic which botanists call fusiform. There are several internodes which are covered in thin sheaths when new, but these dry out and fall off as the cane ages.

The flower spike comes from a node near the top of the pseudo-bulb and it carries about four to 12 flowers, although more than six is rare. Flowers may be 2½" to 5" across its birdwing-like petals.

The flowers are majestically beautiful. They are a pure glistening white, with purple veins on the side lobes and purple markings on the lip.

They may last two months in perfection. Long flower life plus its good looks has made *D. johnsoniae* a valued parent to hybridisers.

Cultivation can present problems because the species is found in a number of different habitats from sea level on the islands off shore in Papua to 1200 feet on Hombrom's Bluff, and from 3000 to 5000 feet in many areas of mountain forest from Morobe to Bougainville. Plants from dry areas such as Hombrom's Bluff need less water. This means that to grow your plant best you will need some idea of where it came from and the conditions it is used to facing.

One thing they will not tolerate is wet soggy feet. They grow naturally in areas where there is almost daily rain, even if only a small shower, so need daily watering and daily drying out.

Most plants will grow in a mixture of brick and charcoal, or treefern fibre and charcoal. A slab of fern or teak is also good.

In the tropics a shade house or under a tree is called for, but south of Brisbane hothouse culture is necessary. If you don't know where it came from experiment with different locations in your growing house.

For feeding incorporate it into your routine programme. A good watering with the following is beneficial: Fill a bucket with good leaf mould, add three teaspoons of aquasol, fill with water and stand overnight. Strain and pour about half a pint over the roots of each plant.

You may propagate when the plant has built up to five or six canes. Back cut behind the third cane and leave until the back canes have a strong new lead before cutting free.



Orchids of Papua New Guinea

Above:

Dendrobium lawesii F. von Muell.

Overlapping perianth segments give the rich cherry red to pink flowers a bell-like appearance. Whites are found on Bougainville. Schlechter placed the genus in the section Pedilonum. It generally grows at altitudes of 4000 to 5500 feet. It is grown successfully in Australia by specialist growers. Photo by Canon N. E. G. Cruttwell.



Dendrobium ostrinoglossum Rupp.

Colloquially known as "The Sepik Blue", it comes from the Ymas Lakes area of the Eastern Sepik River. It is grown extensively in New Guinea on teak posts. A minimum night temperature of 65°F. (18°C.) is necessary to grow this orchid.



Vanda hindsii Lindl.

Named after its finder, Richard Hinds, Surgeon-Botanist of the "Sulphur" during the exploration of New Ireland in 1840. It is the only *Vanda* found in New Guinea. Mr. Geoff Dennis of Honiara, Guadalcanal, reports what is probably the most easterly recording of this orchid in his article on page 28.

Illustration is an official Lae Herbarium painting.



Macodes species.

Found and photographed by Canon N. E. G. Cruttwell, famous New Guinea missionary and botanist. Rudolf Schlechter remarked of *Macodes pulcherrima*: "It would be worth sending a ship all the way to New Guinea to collect it."

A recent finding of *Vanda hindsii*

G. F. C. DENNIS

The natural occurrence of *Vanda hindsii* in the Solomon Islands has been previously recorded, my source of information being the check list of Solomon Islands flora which appears in Dr. T. C. Whitmore's "Guide to the Forests of the British Solomon Islands Protectorate", published some years ago in connection with his work on the behalf of the B.S.I.P. Forestry Department. However, I have no knowledge of the specific locations within the Solomon Islands where the plant has been found and it will, I hope, be of interest to report the existence of *Vanda hindsii* on the island of Guadalcanal, and to record some notes on the natural habitat and physical characteristics of the plant in this area.

I first discovered several plants of what I now recognise as *V. hindsii* in the early 1950's, while botanical collecting along the precipitous rim of a limestone escarpment, which steeply rises from the western bank of the Poha River, North Western Guadalcanal, to about 200 metre altitude, approximately two miles inland from the sea. The escarpment has a micro-climate created by cool, moisture-laden air currents from the river valley at night, and warm, moist sea-breezes throughout the day. The top is clothed in light to thick growth of partly deciduous scrublike trees, with a scattering of medium-sized trees and a few palms (*Strongylocaryum latius*) emerging from the low canopy, growing from the limestone clefts and shallow soil pockets between the limestone boulders and rocks, which provides a thick carpet of leaf litter and humus, and filtered but bright light ideal for the proliferation of dry-type mosses and ferns, several Hoya spp., and epiphytic, semi-epiphytic and climbing epiphytic Orchid spp. These include Grammatophyllum, Dendrobium, Bulbophyllum, Eria, Sarcochilus, Pholidota, Phreatia, Oberonia, Coelogyne, Renanthera, Thrixspermum (including a few scattered, 2-3ft. tall plants of *Thrixspermum plexicaule* growing on the verge of dry grassland, in great contrast to the robust colonies of this species found growing in matted swamp grasses and sedges in the Tenaru swamplands 15 miles south-eastward) and a few terrestrials such as Geodorum, Spathoglottis and Calanthe among the many genera. Most of the non-terrestrials grow at boulder-top level, as well as on small trees. I was particularly attracted to the *V. hindsii* plants mainly because of their vandaceous vegetative appearance, the jagged leaf tips, semi-recumbent to erect growth habit in fairly bright light at the base of small trees atop leaf- and moss-littered boulders on the sheer side of the escarpment reminding me of some species of Vanda and Aerides, and I collected the only three plants which I could locate at the time with the object of trying to establish their identity by growing them in my garden in Honiara. Unfortunately, they failed to thrive, and eventually succumbed to over-exposure to sun and dehydration during one of my overseas leave periods.

Subsequently, in 1969, I revisited the location with the specific object of collecting further plants, and managed to find two. One of these was established at the base of a *Cassia fistula* (Indian Laburnum) tree in fairly bright light in my garden; the other, at the base of a young specimen of *Elaeis guineensis* (African Oil Palm) in — at that time — rather shaded conditions. The plant in bright light eventually died, apparently from over-exposure to sun resulting from the completely deciduous nature of the Cassia. The other, however, commenced to establish a strong root system in the soil and litter at the base and on the basal parts of the fibre-covered stem and leaf petioles of the palm. It has since grown from a small plant bearing five or six leaves to a total (semi-erect) length of c 57 cm. and bears 28 closely overlapping leaves c 4 cm. wide and 20 cm. long. During the past 18 months, the plant has produced at least two (possibly more unobserved) inflorescence shoots which failed to develop beyond 1-2 cm. length before dehydrating and aborting. However, following a prolonged dry spell during October and November last year, the onset of the annual 'wet season', and some pruning of the growing host palm permitting the admittance of more light to the plant, a healthy inflorescence was observed to be developing early in January last. By the end of the month, it had reached c 12 cm. in length and bore six flower buds at c 2 cm. intervals, two of which appeared to be deformed with the developing labellum partly protruding rather than being folded back together with the sepals and petals within the general outline of the flower buds. (Subsequently, one of these deformed buds was aborted, and the other opened as a normal flower.) The first flower opened 3rd February and, on 4th February, my son

Tony—in transit to Sydney on vacation—delivered the fresh bloom into the hands of our good friend Hermon Slade, at Port Moresby, who kindly advised me by telegram that the plant is indeed *Vanda hindsii* — rather than a possible Aerides species as he had suspected after seeing the plant on two earlier visits to my garden in Honiara — although appearing to differ in some minor respects from plants of this species in his own collection. I have never seen a recorded description of *Vanda hindsii,* so am unable to comment further on the identification.

The flowers on my specimen bore a faintly fragrant perfume, and each bloom had commenced to close and wither within five to seven days of opening. The predominant colour of the flower is a rich, glossy — almost plastic-like — reddish-brown or maroon, the somewhat crisped edges of the petals and sepals being bordered a creamy-yellow colour; lateral sepals measure c 15 mm. in length by 13 mm. width and are slightly larger than the petals, and more elongated than the upper sepal. It has a distinct spur and a fleshy cream-coloured callus at the base of the column; labellum bears three keels. Several close-up colour photographs have been made of the flowering plant, but unfortunately these will not be available in time to illustrate this article. It is hoped, however, that these can be published at a later date. I am therefore providing several rough sketches to indicate the nature of the leaf tips, and the two oddly-deformed flower buds, above-described.

In conclusion, I would remark that I have found *Vanda hindsii* only in the area mentioned, during my 26 years of jungle trekking throughout most of the Solomons, as a naturalist and botanist, and B.S.I.P. government herbarium keeper and collector. However, two further plants were brought to me some months ago by a Solomon Islands friend of mine, who reported that he had found them on a high limestone ridge, some miles inland from Honiara, in conditions rather similar to those on the Poha River escarpment. It would appear, therefore, that few plants of this species have been collected for the very reason that they naturally prefer the kind of — usually — inaccessible, specialised habitat previously described, and I have no doubt that further plants will be found following diligent searching in such areas, which are common along the north-western foothills of Guadalcanal.

Honiara, B.S.I.P.

ORCHID SOCIETY OF N.S.W.

AWARDS

For previous list see A.O.R. June, 1972.

765 *Cymbidium* Barcelona 'Magic Wand', EA/OSNSW.
Eleven flowers, 5½".
Owner: Mr. Roy Dean.

766 *Lycaste* Koolena 'Supreme' AM/OSNSW.
Twelve flowers on two flowering bulbs. 23-9-70.
Owner: Wondabah Orchids Pty. Ltd.

667 *Sarconopsis* Macquarie Sunset, Bronze Medal OS/NSW.
A new intergeneric between *Sarcochilus hartmannii* and *Phalaenopsis* Aristocrat indicating potential for cooler growing vandaceous types. 23-9-70.
Owner: Wayside Nusery.

668 Silver Medal for Meritorious Display. 23-9-70.
Mr. L. Sasso.

669 Silver Medal for Meritorious Display. 23-9-70.
Wondabah Orchids Pty. Ltd.

670 Bronze Medal for Meritorious Display. 23-9-70.
Messrs. F. P. Jones and R. Trenerry.

671 *Cymbidium* Balshina 'Helen Adamson', HCC/OSNSW
Twelve flowers, size 4¼", white with chartreuse veins, and labellum white with carmine markings. 14-10-70.
Owner: Mr. T. Henry.

672 *Cymbidium* Balshina 'Helen Adamson', EA/OSNSW.
Same plant as Award 671. 14-10-70.
Owner: Mr. T. Henry.

773 *Cymbidium suave* CC/OSNSW.
Sixty-nine flower spikes on a well grown plant. 28-10-70.
Owner: Mr. N. Shipway.

774 *Sarcochilus hartmannii* CC/OSNSW.
Seventy-three spikes on a well grown plant. 28-10-70.
Owner: Mr. M. G. McKerrow.

775 *Cymbidium suave* CC/OSNSW.
Fifty-five spikes on a well grown plant. 20-11-70.
Owner: Mr. R. C. Arnott.

776 *Laeliocattleya* Walter Slagle 'Iris', HCC/OSNSW
Three flowers, size 7", Bishop's violet with labellum beetroot purple and maize yellow. 26-2-71.
Owner: Mr. G. Lowndes.

"Die Orchideen"

The masterpiece of Rudolf Schlechter

Third revised edition now being produced in parts

RONALD KERR

The 19th century was a period rich in orchid literature. The groundwork for botanical classifiication of philosophical significance had been established by Linnaeus, de Jussieu, Brown and others. These were the years of feverish activity that produced Veitch's *Manual of Orchidaceous Plants, The Orchid Album,* and Fitzgerald's *Australian Orchids.*

John Lindley, as Professor of Botany in University College, London, channelled new orchid discoveries into their first great system of classification in his *Genera and Species of Orchidaceous Plants* and *Folia Orchidacea.* In an action packed life devoted to teaching and writing on botany and horticulture he found time to edit the *Botanical Register* and Gardeners' Chronicle — and also become the world's first great authority on orchids.

On his death in 1865 the mantle of world orchid authority was taken up by Heinrich Reichenbach whose contribution was immense but was largely nullified after his death by the terms of his will. This decreed that "the preserved orchids and drawings of ochids shall not be exhibited before 25 years from the date of my death have elapsed."

The effect of this was virtually to freeze orchidology for 25 years, and no major work covering the whole field was to appear until 1914-1915 when Rudolf Schlechter's *Die Orchideen* was published in 10 parts. Unfortunately the full impact and value of this work was reduced by the First World War and afterwards by the author's untimely death in 1925. Nevertheless the completenss and thoroughness of the work have made it a standard botanical reference.

Rudolf Schlechter became well qualified to produce the outstanding orchid work of the 20th century through years of practical botanising in Africa, Indonesia, Australia, New Guinea and other countries. His New Guinea research covered two long periods: the first 1901 to 1902, the second 1906 to 1909.

Before Schlechter there had been no detailed study of New Guinea orchids and only about 90 had been named. While there he was engaged mainly on economic botany but found time to classify 1450 species covering 116 genera.

Schlechter is noteworthy for his attempt to bring order to the vast *Dendrobium* genus. He divided the genus into four sub-species and 41 sections classified according to a spectrum with related sections or "spectrum-bands" alongside each other as colours are in a rainbow.

Later botanists have modified his arrangement while accepting the underlying principles. Four of his sections now have full species status.

A second edition, with additional material on culture, was published in 1927.

A NEW EDITION

Recently the original publishers, Paul Parey of Berlin and Hamburg, commenced the publication of a third edition in parts and extensive revision has been undertaken. The first three parts have now been printed and are available at DM20 each. Revision of these parts was carried out by Dr. F. G. Brieger. Material is up-dated to include the latest data on pollination, genetics, distribution and taxonomy.

Dr. Brieger has modified Schlechter's basic classification to conform more with the ideas of Lindley. He has also provided detailed botanical keys for each genus.

A further 15 parts are in prospect and revision will be undertaken by experts in each genera. Each part is illustrated with excellent black and white photos and excellent drawings. The drawings of column structures in the first part, pp. 56-63 will be particularly valuable to the person wanting to know the fundamentals of orchid classification.

One or two beautiful colour illustrations by Dr. J. Mergner are included with each part.

The text is in German but the keen orchidist who is not gifted in the language can comprehend the classification and nomenclature and get the gist of the text with a German dictionary.

It is regrettable that the publishers did not decide to produce a simultaneous English language edition. There is much in the text of interest and value to the horticulturist, but only

the professional botanist or very keen and botanical non-German reader will buy it untranslated. This is a pity.

If you are keen and botanical, and wish to learn German, then this is a book to cut your teeth upon.

On the evidence of the first parts this third edition is the definitive orchid work of this century. It is worth possessing for this reason alone.

It is worth possessing, too, because future parts should contain a comprehensive classification of New Guinea orchids based upon the author's *Die Orchidaceen von Deutsch Neu-Guineae,* published 1911-1914.

Unfortunately no comprehensive work on New Guinea orchids has been done since then, and the Schlechter specimens and writings on the orchids of the world's densest orchid country were lost on the night of March 1, 1943 when the Botanical Museum at Dahlem was bombed into oblivion.

The new edition, it is hoped, will re-examine and classify the available Schlechter material on New Guinea as a basis for work to be carried to future fruition by the people of New Guinea themselves.

Die Orchidean by Rudolf Schlechter. Revised third edition, published by Paul Parey of Berlin and Hamburg, in 18 parts. Price DM20 for each part.

After Schlechter . . . What? . . . Who? . . . and When?

This paper was prepared for the University memorial to Schlechter.

ANDREE MILLAR

Papua New Guinea has the largest population of orchids of any country in the world; it also has the largest number of species, but just how many have been found, how many have been named, is anybody's guess at the present time. The only serious work on the orchids of Papua New Guinea was done by Rudolph Schlechter in the days of the German regime. Schlechter who was both collector and taxonomist, spent two years in German New Guinea, first in 1901-1902 and again in 1907 to 1908. In addition to visits to New Ireland and New Britain, he spent some time of the mainland, working in both the Torricelli Ranges and the Finisterre Ranges. He did not penetrate into the Western and Eastern Highlands of New Guinea.

Although he made large collections of live plants, and sent many home to Germany, his major contribution to the orchidology of Papua New Guinea was in the field of taxonomy. Botanical records state that he identified all but 281 of the 1830 species believed to occur here. The most exciting words which occur on page after page of his book *Orchidaceen von Deutsch-Neu-Guinea* are sp. nov. Almost all of the type specimens were lodged in German herbaria, and sadly, many of them were destroyed in the bombing raids during World War II.

In the intervening years since the end of World War I, when Australia took over the administration of British Papua and the mandated Territory of New Guinea, certain species have been found to have a wide distribution from North Australia to Dutch New Guinea, and it more than possible that some plants will be named twice. For example, *Dendrobium ionoglossum* Schltr. sp. nov., was found to be identical with *Dendrobium toffti* F. M. Bail. of Australia . . . this name again disappears with the prior claims of *Dendrobium nindii* W. Hill.

Looking back over the intervening years since Schlechter made his collections, to the climate of botany in the Papua New Guinea of today, one can perhaps find some excuse for the haphazard way botany has been performed in this country. The demands made on the pitifully few botanists who have come here, and the botanical field workers, by visiting overseas scientists, had dictated the areas in which work has been done. This has resulted in such areas as Mt. Wilhelm in the Eastern Highlands, and Edie Creek in Morobe, and the road edges leading to both areas, being collected again and again because the needs of the visitor could be met by a visit to these relatively easy areas. It has been in this repetitive form, and the necessary expense involved such as vehicles, collectors and loan of equipment has made a considerable hole in the available moneys allocated to botany.

Very few purely collecting trips have been made in the last 20 years which have been purely botanical exploration. Little systematic collecting can be done when shepherding people in search of anything from beetles to hallucin-

ating mushrooms. So little has been done on Orchid Taxonomy since Schlechter that it brings us to the questions — "After Schlechter . . . What? . . . Who? . . . and When?

As far as 'After Schlechter . . . What, has been done and What Is Planned', the answer is indubitable, nothing has been done, and sadly, nothing has been planned. There can be no doubt that both scientifically and commercially, the orchids are one of the most important plant families in South East Asia, and we have no choice but to face up to the unpalatable fact, that little has been done and nothing planned. Stated even more baldly, the Germans, through the work of Rudolf Schlechter, began some very significant work on the orchids of Papua New Guinea at the turn of this century. We, who followed on, have done practically nothing.

Schlechter did not go to the Highlands, but this is an area which has been over-collected on the road-sides and at certain strategic points. In my years with the Division of Botany, I camped four times at Marafunga, or the near-by Fatima River area. My work was essentially managing the camp, interpreting with the local people and supervising the scientific handling of their work. In between times, I could collect herbarium material and plants for my own Department of Botany. Necessarily, I could only make short forays near the camp sites, in between my botanical baby-sitting chores. Consequently, I became familiar with the flora in a confined area. Herbarium specimens were made and live plants collected; of the latter, many were despatched to European and American Botanic Gardens. In the fullness of time, an occasional identification was made, mainly from Edinburgh. Even there, taxonomic work on the orchids of Papua New Guinea is spasmodic, very adequately performed by Paddy Woods on plants which flower in his live collections. Valuable as it is the naming of even one more of our orchids, our efforts in the 53 years since the end of the First World War, is humiliatingly microscopic.

No doubt many name changes will be made in the years to come, when some institution accepts the challenge of toxonomy of the orchids of Papua New Guinea. Many of our orchids will prove to be identical with the orchids of Northern Australia, and certainly with those of West Irian . . . the latter were covered roughly in parallel in time and number of species by J. J. Smith.

Schlechter made the bulk of his determinations by personal collection.

Rudolf Schlechter died in 1925. Between 1908, when he made his last lengthy visit, and 1923, he worked on the collections of other people, identifying and classifying orchids from such widespread areas as the Waria River (Kempf in 1919 to Lederman and Schultze in the Sepik). So this brings us to the other two pertinent questions . . . Who and When. Who will follow Schlechter and more importantly, When?

Perhaps our best hope are today's students in the University of Papua New Guinea, who have shown a remarkable interest in the establishment of the orchid collection at the Gardens of the University in the last two years. Three or four of them are showing an interest in a degree in Science, leading to the further study of Botany and Orchidology in particular.

They are grateful that Schlechter bequeathed them such a firm foundation on which to begin.

Parasarcochilus hirticulcar Dockr.

Many favourable comments have been made on the article and colour illustration of this fascinating Australian orchid as published in the December, 1972, issue.

The photo credit was wrongly given to the author of the excellent article. It should have gone to ace naturalist photographer Mr. E. R. Rotherham who is well known for his collaboration in the books "Flowers and Plants of Victoria" and "Australian Native Orchids". Apologies, Mr. Rotherham, and thank you for the fine photo.

MR. B. C. SCHWARTZ RETIRES

Mr. Bert Schwartz stepped down as President of the O.S. of N.S.W. at the last Annual General Meeting. During his three-year term Mr. Schwartz worked hard for the Society and was personally responsible for establishing an association with the Westfield Shopping Centre organisation whereby the Winter and Spring Shows are held at two of the Westfield malls. This has not only ensured security against loss but has brought the pleasure of orchids to countless people. At the Christmas Dinner and Party Mr. Schwartz was presented with a portable TV set as a mark of appreciation.

The new President is Mr. Barry Collins who has a long record of service to the O.S. of N.S.W. Mr. Collins is well known for his work as Marshal of the Sixth World Orchid Conference Show.

WONDERFUL SPHAGNUM

Sphagnum moss is excellent for starting cymbidium back-bulbs or canes of cattleyas or hardwoods, it is also good for protecting those nice new roots from the base of a new cattleya shoot. Try and get a pot to grow for you; most have success in an ice cream container or plastic bag. Fresh sphagnum can work wonders and it is worth trying to grow some.—"Grafton Orchid World".

NOT SO SLOW

"Many of us keep turtles in the greenhouse to eat slugs and crawling bugs on the floor; they enjoy life in the greenhouse and seem to find enough to eat there." — Fred N. Bennett.

A WALK THROUGH AN ORCHID FOREST

W. HUDDY

Early on a cool winters morning in North Queensland our party left in two cars for our climb of one of the many mountain peaks surrounding Cairns. At Kuranda (1200ft.) we picked up a friend who was to be our guide. This was his third attempt to climb this peak but each had been stopped by storms. He reported that the temperature in his kitchen was 48°, very cool for the rest of the coastal dwellers.

It wasn't long before we turned off the main highway on to a secondary dirt road, in good condition, so that it was pleasant driving up through the open forest and into the country where casuarinas formed a thick border along the road. These eventually gave way to the thick evergreen rain forest and we knew that we were up in the high wet area.

Soon our guide called a halt by a deserted forestry hut, with ample parking room. All jumped out of the cars to many ohs and ahs as it was a lot colder up in the damp scrub. It was a case of on with jumpers, and we were soon walking to keep ourselves warm. Even our youngest, aged 10, was striding out with the adults. We were now on a branch track with a 2½ mile walk upwards ahead, but the track was good and wide with plenty to see and talk about and this made the walk seem easier.

Our guide, an amateur botanist, pointed out a large oddity of the orchid world, the leafless *Galeola foliata* entwining itself over a small tree. What a sight it will be when in flower!

The track wound its way ever upward with some very steep climbs causing several stops, and then on again along a ridge with creeks on each side, way down with palms and ferns along the banks. One creek was the start of the Little Mulgrave and the other the Clohsey River which flows into the Barron River. The one danger of the trip was the stinging tree, one of the genus *Laportea* with their beautiful iridescent leaves. To touch or brush against them causes a burning sensation which can last for months each time that part of the body is wet. All newcomers in the party were shown these trees with the result no stings were received on the outing.

Rounding a corner we came abreast a large rock some 8 to 10 feet high on which in full bloom were dozens of *Dendrobium speciosum*. What a sight! With the early morning sunrays shining through the gap above like a spotlight on to their creamy yellow blooms, even the non-orchid lovers in the group were fascinated. The sides of the rock were sheer but a lower rock allowed us to stand level and thus take several photographs. The orchids were in good condition and showed no damage from wallabies as did other plants seen later on flat rocks which were easily accessible.



The objective

Eventually we left our smooth walking track and headed through the scrub to the top about half a mile up; the ridge was not as heavily clad with undergrowth so no difficulty was encountered. By now the orchids were beginning to show in greater numbers on top of the many granite type rocks. Noticeable were *Liparis nugentae* or *D. fleckeri*.

A few more yards and we were on level ground and the trees here were covered with orchids and to grab a tree for support one had to watch where the hand was placed or it would be on to a plant of *Cadetia taylorii,* or *Dendrobium adae*.

At the base of the large monolith at the top, rocks had fallen and formed a cover over a long drop. On these rocks along with a green moss grew clumps of *D. fleckeri,* dangerous to reach. Here, also grew many well eaten *D. speciosum*.

Moving north along the base we filed down a narrow gap which brought us out on to the eastern face, from where we could see Cairns in the distance, with Green Island lying in the blue of the ocean. Here we rested for some time enjoying the view of the ranges below us. Here were several plants of *D. agrostophyllum* growing in full sun on stunted bushes. On the bare rock face grew a plant like a cacti with



Dendrobium speciosum massed on rocks

its new and very pretty orange growth. I have been informed that it is of the lily family, called *Boria.*

We moved on south along the base of rock on to a saddle with a lot of smaller rocks all shaded by the tall trees on these rocks as though fighting for room grew *D. fleckeri Liparis,* and several clones of *Bulbophyllum newportii, B. langeniforme* and *B. wadsworthii.* Unfortunately the flowering season had not commenced, though one early bloom was found on *D. adae.* Further on the playground of the Satiny Bower Bird was seen with no sight of the bird unfortunately, but it was certainly heard.

By this time we had reached the southernmost part of the top and on clambering on top of a pile of rocks we were above the surrounding low shrubs and trees and could see down a valley on to the small sugar town of Edmonton. Back among the tall trees the billy was boiled and the contents greatly enjoyed.

The trip back was at a leisurely pace, with the young fry in the lead to find the blaze marks. More Bulbophyllums, *B. macphersonii* and *B. radicans* were seen on some fallen tree tops. *D. monophyllum* and *Cymbidium madidum.* By the side of a timber track we found a nice plant, still on a piece of bark, of *D. ruppianum* forma *magnificum,* apparently broken off in the process of dozing the track.

Sunning on a pile of timber and dirt was a harmless tree snake of a beautiful vivid blue colour. We called for our snake catcher, but the reptile had slipped away by the time he arrived. We arrived back at our cars around 3 p.m. and headed homewards. Everyone enjoyed the walk so much it is likely that we will be there again next year. Since the walk this area has been gazetted by the Government as a National Park, where flora and fauna cannot be removed.

70 *Dalton St., Cairns*

Native terrestrials from seed

Conservationists! Native growers! You'll be impressed by the thorough work on asymbiotic culture of Australian terrestrial orchids now being carried out at the Canberra Botanic Gardens.

This work is being carried out by Messrs. D. K. McIntyre, G. J. Veitch and the Curator, Mr. J. W. Wrigley.

A paper detailing techniques and the not inconsiderable results obtained over the last two and a half years is published in the December issue of the *American Orchid Society Bulletin,* pages 1093-97.

This research by a highly qualified team with time and resources at their disposal is timely. Most Australian terrestrials cannot be satisfactorily transplanted, others decline slowly, and only a few will multiply quickly vegetatively. However, a few native growers have found that they can propagate many species by seed, often by as simple a technique as scattering the contents of its seed pod around the base of a plant that has flowered.

The matter would be unimportant except that many terrestrials are found now only on ungrazed land. In other cases the suburban sprawl is over-running areas on which terrestrials were once common. A satisfactory technique for asymbiotic culture will ensure their survival.

May the day be not far distant when the Canberra Botanic Garden is famous for its display of Australian terrestrial orchids. This will mean that amateur growers will also be able to grow a much wider range of species with success and pleasure.

VICTORIAN A.N.O.S. ON CONSERVATION

"Let us not be too complacent about our orchids, as, for a number of years several species of 'groundies' have not been seen, and there are several others known to be on the verge of extinction, so please, before digging up a rare orchid, let us think, would not it not be better to leave it." Mr. Cliff Grosvenor, Chief Propagator at the Melbourne Botanical Gardens, writing in Melbourne A.N.O.S. Group Bulletin. Mr. John Fanning, Editor of the Bulletin, comments: "This makes one wonder whether attempts are being made to help nature by raising the seed in laboratories and then replanting them."

MELBOURNE EASTERN LIFE MEMBERS

Two prominent Victorian orchid personalities, Messrs. Jim Rentoul and Neil O'Sullivan, were unanimously voted the honour of Life Membership by the members of Melbourne Eastern Orchid Society in 1972. The Society reports a very successful year with greatly increased attendances at monthly meetings and interesting Winter and Spring Shows. Intending members should contact Mr. K. Bruce by phoning 878-0247.

GLASSHOUSE HEATING

A warning from overseas

Acknowledgements to San Fernando Valley Orchid Society Newsletter and to

STANLEY J. SULLIVAN

Gas fumes, from an unvented heater in the greenhouse, is the culprit that ruined over 30 blooms on our orchid plants over a period of six weeks. Only through elimination of quite a few logical possibilities was the trouble finally found. We knew, at the time of installation, the unvented heater was approved by the American Gas Association and the Los Angeles Building and Safety Department as safe for residential use. When our new bloom buds started wrinkling, turning brown, and dropping off, we studied all available books trying to determine the cause. My wife and I assumed that, if the heater was safe for humans, it was safe for orchids.

Possibilities of insect or fungus damage were quickly eliminated. Virus infection could not be readily determined, so it was held in abeyance until the other possibilities could be eliminated. We checked night and day temperatures throughout the greenhouse for hot or cold spots. We checked humidity and looked for ventilating fan and cooler draughts, and even borrowed a very expensive light meter that was calibrated in foot-candles to check the light intensity. We even rechecked all the labels on our fungicide and insecticide containers to see if we had inadvertently mixed to the wrong proportions. Watering and fertilizing had been performed on schedule for many months, so this could not be the reason for bud drops. Smog was eliminated for several weeks because of the high winds from the north and the fact that we could see the mountains for 10 miles in all directions.

Nothing seemed to be wrong with our orchid culture, but not one budded orchid produced a bloom, nor did any newly purchased plants maintain existing blooms without wilting or discolouring within a day or so after being placed in the greenhouse. Even the flower stems beneath the buds turned bright yellow before the buds fell off. Several of these newly acquired plants had blooms that were not old enough to have full colour, so we knew that the flowers were not at the end of the normal blooming period.

We were grasping at straws by this time, and the suggestion of any other possibilities, even atomic radiation or witchcraft, would have been welcome. My wife and I were thoroughly discouraged, but she kept insisting that it was earlier damage from smog or our unvented heater causing the trouble.

One day when I returned home from work, about a dozen mature plants from the greenhouse, with buds just breaking the sheath, were atop the sewing machine, the dresser, and the old TV in the back bedroom. Inquiring why, I was informed (in no uncertain terms) that they would stay there until the buds either fell off or progressed to full bloom. Day after day, in the bedroom orchidarium, the buds grew in a healthy manner and eventually opened into beautiful flowers. This definitely eliminated smog, since the bedroom had the same fresh air circulating in it as the greenhouse, just 10 feet away.

In the Los Angeles area, natural gas is used exclusively — not gas manufactured from coke, which is still used in a few eastern cities during emergencies or peak-load periods and is not recommended for greenhouse heating-fuel. Sometimes the natural gas piped in from the oil fields of the south-central states will chemically vary according to the field of origin, but this is not enough of a change to cause improper combustion in the gas heater.

We still do not know what the chemical analysis of the detrimental fumes would be. An analysis might show the presence of ethylene, carbon monoxide, or some other product of inefficient combustion that is in concentration too low to affect humans, but will affect orchid buds and blooms. From our observations, we are satisfied that something harmful to orchids was being released into the air of the greenhouse. Needless to say, a vented heater was installed and the removed unvented heater was junked. This solved our problem.

It is still possible that a good cleaning of the heater and readjustment of the air-mixing valve and pilot may have solved the problem and eliminated any possible harmful fumes. We are not gamblers, and like the child who burned his fingers on the hot stove, we learned a lesson and were not going to be burned again — once was enough for us.

In all probability, many orchid enthusiasts have used unvented heaters for years and have

had excellent results with them. All we can answer to that fact is that the potential is there and here is always the first time for everything. We would not take an unvented heater as a gift if we were freezing to death. Incidentally, in Los Angeles, new building regulations will shortly be in effect to ban unvented heaters for all new installations and force removal, within a few years, of all unvented heaters already installed.

Combustion in a vented heater occurs within an inner metal chamber with all fumes, residue, and by-products of combustion expelled directly to the outside air through a stovepipe or flue. Room air travels throuh a metal jacket surrounding the chamber, is heated, and is passed back into the room either by gravity flow or forced air fan. The room air does not mix with the burning gases in the combustion chamber, so no fumes can be released into the room.

In the unvented heater, room air is heated by direct contact with the gas flame, the hot burner, and the heated shell that houses the unit. Dirty burners, clogged jets, or improperly adjusted air valves can result in noxious fumes in either type of heater, but in the unvented heater, the fumes are transmitted back into the room, while in the vented heater, these fumes are expelled outside. Even the small heater pilot that is adjusted improperly or is dirty, can emit harmful gases into the room from the unvented heater. Both types of heaters consume some oxygen to sustain combustion, but with normal air leaks in the greenhouse structure and proper ventilation, the oxygen content of the air is not lowered to a point where asphyxiation of the hobbyist is a danger.

For what it is worth, our suggestion to anyone who uses an unvented heater to heat a greenhouse containing orchids is to seriously consider the installation of a vented heater, now, and not wait until forced to do so. It may save a lot of grief and disappointment, if you have the same trouble we had. Not only will the potential fume hazard to the orchids be eliminated, but it will be much safer for the hobbyist. Quite a few deaths occur each year that are attributed to faulty unvented heaters. With vented heaters, there is no potenial hazard to man or orchid.

It is wise to remember that most of what we call nature's rules are really our own rules made by us for our own convenience. Densey Clyne in "Australian Ground Orchids".

OBITUARY

The creator of *S. Lois* is dead

With sad and unexpected suddenness Mr. Ira Butler passed away in his sleep on the 24th November, 1972.

Ira was known to his many friends as a gentle soul who was consistently and unobtrusively generous with his time, constructive advice and pieces of his best plants.

He became very well known for his work as a hybridist and he broke new ground with his work on the genus *Sarcochilus*. His crossing of *S. hartmanii* with *S. ceciliae* resulted in many clones of horticultural merit, some of which have been used as second generation parents. He named the cross *Sarcochilus* Lois. Information on many of his crosses may be found in back copies of this journal. For details of the *Sarcochilus* hybrids see "A.O.R." for June, 1967, page 75.

Ira was Treasurer for the highly successful Sixth World Orchid Conference held in Sydney during 1969. His economic skill contributed greatly to this success.

Ira was born at Mungindi, N.S.W., but his family came to Sydney where he was educated at Sydney High School and Sydney University, eventually joining the Rural Bank. From there he was appointed Agricultural Economist to the Reserve Bank of Australia, later filling even more senior positions. He retired early in 1972.

The late Mr. Butler will be sadly missed by countless friends. We extend to Mrs. Butler and family deepest sympathy in their bereavement.

BRISBANE O.S. CELEBRATES

The Brisbane Orchid Society is ten years young this year and is celebrating with an Autumn Show for a very special charity: The Asthma Foundation of Queensland. The Show is on Saturday, 31st March and Sunday, 1st April, at Zupps' Motors Showroom, 1310 Logan Road, Mt. Gravatt. Help make it a wonderful anniversary.

QUEENSLAND O.S. AUTUMN SHOW

Famous for masses of superb hardcane dendrobiums and other autumn flowering genera. In the main Auditorium of the Brisbane City Hall, 17th, 18th and 19th April. These are the three days before Easter.

EASTERN DISTRICTS (BRISBANE) O.S.

The Autumn Show of this active Society will be held in the Guardian Angel's School Hall, Bay Terrace, Wynnum Central, on the 30th and 31st March, 1972.

MRS. REDIX ELECTED TO N.S.W. COMMITTEE

Mrs. Eve Redix has capped her long record of outstanding service to the Orchid Society of N.S.W. by being elected to the Management Committee. Mrs. Redix won her place against a strong field and is the first ever lady member of the Committee. Following a Pacific cruise over Christmas, Mrs. Redix was rushed to hospital for an operation and is now home after a slow recovery. All her many friends will wish to join in saying congratulations and wishing bountiful health from now on.

THE GOLDEN TOUCH

Shoalhaven Orchid Society added a regal touch to the Christmas 1972 Bulletin by printing their attractive masthead and greetings in gold ink. The masthead design features orchids and a scroll around a Lyrebird.

Growing Hardcane Dendrobiums

JIM MACKINNEY

I was first introduced to this beautiful group of Orchids by Dr. J. Vote whilst living in Sydney and commenced growing them there with limited success. On moving to Brisbane I found these dendrobiums much more widely grown and grown much more successfully.

However, here in sub-tropical Brisbane these dendrobiums are not as easy to grow as many other orchids. Whereas most of the orchid genera are quite happy in the simplest type of a shade-house, these dendrobiums prefer a glass or plastic covered structure and for really optimum results a glass-house that can be artificially heated at night for our rather short winter period. Without this additional heat I have found that the flowers do not last very long once the night temperatures start to fall during May. Within the Brisbane metropolitan area, the minimum night temperature can vary by as much as 10 degrees Fahrenheit, and this variation is around the borderline for successful culture. When the night temperature drops to under 55 degrees Fahrenheit, much more care is necessary as to watering, etc.

Bark and charcoal are the two most common potting mediums in proportions ranging from 100% bark to various combinations of bark and charcoal right through the range to 100% charcoal. Some of the local barks such as casuarina and the various pinus barks are used, but imported fir bark remains the most popular due to its longer lasting qualities. The usual arguments re the merits of clay and plastic pots prevail but the important thing is that the watering is adapted to suit the pot and the potting medium. During the cooler months when the plants are virtually dormant, it is essential that the potting medium dries out rapidly, as any surplus moisture at this time will soon rot out the dormant eyes at the base of the bulbs.

The pot size should be relevant to the size of the plant; a 2" pot for the first one or two years, then usually up to a 3" pot for another two years, and from then on a 4" or 5" pot depending on plant size. It is only when plants reach a height of 24" to 30" that good long spikes of top quality flowers can be expected. Repotting should only be done just as new root action commences from the leading growth of the plant, usually late spring or early summer. Slow release fertilizers are now being used but caution is necessary as root burn can occur if too much is used. We prefer to use these slow release fertilizers at about ½ strength and supplement this with foliar type fertilizers during the growing season.

During the growing season which commences in the spring and early summer the plants will grow rapidly and so require adequate amounts of water and fertilizer in conjunction with quite bright light. As autumn approaches flower spikes will commence to show from the apex of the bulb and on good strong plants, two or sometimes three or more spikes may be produced from the one leading bulb.

After flowering the plants go into a period of almost complete rest but this does not mean that they can be forgotten for it is during this time that the plants are more subject to attack by various insect pests, such as scale, mealy bug and red spider. These pests can do serious damage to the plants if uncontrolled, as they feed on the dormant eyes at the base of the bulbs resulting in very weak growths, or in some cases no new growths at all. Two or three sprays with one of the systemic insecticides will give control of these.

Turton St., Sunnybank

QUEENSLAND O.S. TROPHIES

It takes a consistent grower to win a yearly point score and the 1972 winners in the four competitions conducted by the Queensland Orchid Society are therefore worthy of praise. The Sir John Chandler Trophy based on general "Popular Vote" results went to Mr. L. G. Cuttler, with Mr. and Mrs. Henderson and Mr. Ashburn equal second. The Clive Schokman Trophy, based on the species "Popular Vote" also went to Mr. L. G. Cuttler and the equal runners-up were Mr. and Mrs. Cotton and Mr. and Mrs. Henderson.

The Judges' Choice Competition is for the Mr. and Mrs. Hunter Trophy and here Mr. L. G. Cuttler lagged a little because Mr. R. Ashburn was able to tie with him for first place and second place went to Mr. and Mrs. Cotton. Mrs. Cotton is well known as the Queensland Associate Editor for "A.O.R."

There are some keen novices in Q.O.S. and although there was only one winner, Mr. J. Festin, there were no less than four equal second: Mr. Gaff, Mrs. Heilscher, Mr. E. D. Clarke and Mr. B. Hughes. Congratulations.

If you live in Brisbane and aren't a member of Q.O.S. give yourself a chance at these trophies by joining now. Phone Mr. Ron Williamson at 95-3353 for details now.

EASTWOOD HELPS RAISE $1000 FOR CHARITY

The Eastwood & District Orchid Circle, N.S.W., co-operates each year with the Epping-Eastwood Lions Club to raise money for charity at the Circle's Spring Orchid Show. In 1972 this effort brought in $1000 and resulted in the Circle being awarded the Lion's "Certificate of Appreciation".

Rare Paphiopedilum and Phragmipedium Species and New Hybrids

Paph. chamberlainianum var. flavum — yellow	F/S 1 only	$95.00
Paph. chamberlainianum var. flavescens — green, Yellow, purple	F/S 2 only	$55.00
Paph. chamberlainianum — SP	F/S	$25.00
Paph. barbatum	F/S	$12.00
Paph. concolor var. Hennesianum	F/S	$12.50
Paph. niveum	F/S	$12.00
Paph. bellatulum	F/S	$12.00
Paph. godefroyae — SP	F/S	$13.50
Paph. subleava x self	leaf-span 2"-3"	$25.00
Paph. dayanum x self	leaf-span 2"-3"	$40.00
Paph. godefroyae var. heximatheum	3"-4"	$ 9.50
Paph. nigritum	2"-3"	$30.00
Paph. philippinense	F/S	$30.00
Phrag. caudatum var. Cuzco x self	3"-4"	$15.00
Phrag. caudatum var. lindenii x self	3"	$12.00
Phrag. caudatum var. Wallissii x self	3"	$20.00
Phrag. piercei x schlimii — outstanding hybrids for pink to red	2" pot	$ 7.00
Phrag. roezlii x self — excellent pink form	2" pot	$ 5.00

EXHIBITION PAPHS. 2" pots $3.50

Paph. Rose Kerral No. 1 x Paeony 'Regency' — rose red to bright reds.
Paph. Owleswick 'Perfection' x Bonheure No. 3 — some reds, some spotted, long stems.
Paph. Yerba Buena 'Glacier' x Gwenpur 'Symmetry' — good shapely greens.
Paph. Van Ness No. 3 x Margaret MacCaull 'Stupendous' — orange, bronze, good shape.
Paph. Margaret MacCaull 'Stupendous' x Gwenpur 'Symmetry' — bronze, yellow, greens.
Paph. J. A. Branch 'Grand' x Wendbourn '4 Start' — burgundy, reds, long stem, shapely.

NEW RELEASE MINIATURE CYMBIDIUMS 3" pots

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Society Wisdom

Cultural excerpts from Club and Society Bulletins

Check your natives

Bill Janney in West Aust. Orchid

On some Australian Native plants and their primary hybrids, and a few seem more prone than others, a black spot appears on the leaves. This is a fungus so give them a spray with a fungicide or a dusting with a powder containing either Zenib or Kaptan. I know it is hard to eradicate this disease, but it can be kept in check, and so do minimal damage to the plants. Mealie bug is always hiding in the places you can't see or easily get at, so these plants have got to be inspected for constant vigilance is the only way you can keep it in check. Scale is another pest that demands similar inspection and then a tooth brush and white oil will help to keep it at bay.

Something about Oncidium papilio

Bill Janney in West Aust. Orchid

This plant, when mature, will flower for nearly the whole year. Our plant started a flower spike on 15-10-70 and the first flower appeared 17-2-71. Since then, at regular intervals as one flower finishes another bud starts and some other flowers open. The original spike still has buds on it, and meanwhile two new bulbs have matured and from them have appeared two new flower spikes (about 12" high now). So it could be that all of them will flower together. The plant is grown in the heated glass house in pine bark. It is watered and fertilised regularly and there does not seem to be any rest period.

"Why don't my plants flower?"

Victorian Orchid Club Bulletin.

Bob Hodgins was roped in for his comments on how to flower Cymbidiums and his first comment was that the plants must get sufficient light. This was absolutely essential but the plant must also be large and healthy in order to flower. It was however possible to be overkind to Cymbidiums and to finish up with excellent foliage but no flowers. Some plants are just naturally shy flowerers but with a collection you should target for about 80% flowering each year.

If growers are using a high nitrogen fertilizer they should discontinue it in February as this promotes growth. Change to a high potash fertilizer such as 19-28-14 which will help the flowering. It is important to understand that any check on the growth such as a cold snap will promote flowering.

George Woolley's comments on flowering softcane Dendrobiums were firstly to water and fertilize freely until May but from there on leave the plant alone and only lightly mist it. The plant should also be hung up close to the glass to receive the maximum available light. This is the normal procedure to achieve good flowers on Dendrobiums but as against this George Enever, who grows his without heat never lets them dry out at all and they are always shaded.

Bifrenaria harrisoniae is always a difficult plant to flower but Ian Whitcombe who had tabled a well flowered plant explained that he grew his cold in Cymbidium mix and it sat on a high shelf but still some 4' below the glass.

Bifrenaria harrisoniae is always a difficult vided they are healthy plants. They require fairly heavy shading and must be grown in a very open mix preferably of the fir bark type with fibre, sand and peat moss added.

Stanhopea tigrina

Manly-Warringah O.S. Bulletin.

A remarkable plant that can always be relied upon to attract attention at orchid displays. Although the flowers only last a day or two, its foliage is of decorative value in the glass-house between flowerings. It grows best in warm conditions with protection from the hot mid-day sun, together with plenty of water and a moist atmosphere. The flowers bloom in summer.

Brassia verrucosa

Manly-Warringah O.S. Bulletin.

An interesting genus of the Oncidium group, it has quaint "spidery" flowers, carried on arching spikes up to 2 ft. in length, and adds contrast as well as variety to a group of orchids as in a display. It is quite easily grown if given treatment similar to that of Oncidiums, needing plenty of water and a moist atmosphere during the growing period, and drainage should be adequately provided for. It flowers in spring and early summer.

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Society News and views



Townsville celebrates: A corner of the 1972 Townsville Orchid & Allied Plants Association Show. The picture demonstrates how well many unusual orchids and foliage plants are cultivated by Townsville growers.

The Townsville District Orchid & Allied Plants Association maintains an active programme of lectures, plant displays, Shows, social activities and visits to collections in all parts of Nth. Queensland. New members are made very welcome. For information contact the President, Mr. T. Verran, or the Hon. Secretary, Mrs. M. Mercer, at P.O. Box 677, Townsville, 4810.

WEST AUSTRALIA FORGES AHEAD

In 1972 two new orchid groups were formed, one at Narrogin and the other at Bunbury. The formation of groups at Albany, Katanning and Northam is contemplated. All this vital activity is evidence of the constructive leadership given by the Orchid Society of Western Australia Inc. Full details of meeting nights and places for these new groups will be published as soon as available. Meanwhile interested readers should contact the Honorary Secretary, Orchid Society of W.A., Mr. John Foley, 39 Stirk Rd., Alfred Cove, W.A. 6154.

NINETEEN NEW FRIENDS

The last December issue of the Tasmanian Orchid Society Bulletin reports a total of 19 new members. Even N.S.W. doesn't get that many in a month! The Tassie boys and girls really have something going for everyone so if you want to join 'em contact Hon. Secretary, Mr. J. Longden at 54 Kellatie Rd., Rosny, 7018.

VICTORIAN O.C. GAINS MEMBERS

Last year 57 new members joined the V.O.C. With resignations and the sad demise of three members the net gain for 1972 was 37. This indicates the healthy state of the hobby in Victoria and the attractive programmes, shows and social activities of the Victorian Orchid Club. No doubt this strong membership gain has been helped by the comforts of the new meeting place in the Main Conference Room, National Science Centre, 191 Royal Parade, Parkville.

BILL MILLS HONOURED

Mr. W. C. Mills, a long time President and stalwart worker for the Sutherland Shire Orchid Society, N.S.W., was presented with a Life Membership Badge by current President Mr. Les Peaty. This Society is one of the largest metropolitan orchid groups in Australia, and Mr. Mills played a big part in building it up.

SHOALHAVEN SHOWS APPRECIATION

February issue of the Shoalhaven O.S. Bulletin contains a paragraph of praise:—

"The Orchid Society of N.S.W. is to be commended for its generous decision to pay a handsome 50% bonus to Affiliate Societies who showed faith in the Australian Administrative Committee of the Sixth World Orchid Conference by their guarantee for the 1969 event of a sum comparable to their size and means, thus helping with its great success. While this spirit dwells among us we will always be high among world leaders of orchid culture and display."

BOOLAROO O.S. HAS FOLIAGE NIGHT

Featured at a recent meeting of the Boolaroo O.S. (N.S.W.) was a talk by Mr. Bill Whalan on *The growing and care of foliage plants.* Members were asked to bring a foliage plant along with their orchids. Prizes were given for the best fern and the best foliage plant.

In addition the floral art section was devoted to a foliage arrangement using "own choice" foliage only.

Many societies already conduct foliage sections but few have devoted a special night to foliage plants. Foliage plants complement orchids perfectly and are essential to the aesthetic display of orchids in shows. It seems very logical to devote a special night to them. Ask your committee to fit one into your next programme.

NOR' WEST TASSIE HAS THE STRENGTH

The Orchid Society of North-Western Tasmania reports finishing 1972 with a credit balance of $534.05. This reflects a very good year with fine shows, interesting meeting nights and many visits and outings. If you would like to join and help them spend that $534.05 put a phone call through now to the Honorary Secretary, Mr. P. Jackson, at 31-4915.

ORCHID COMMUNITY POTS ARE HERE AGAIN

5 plants per pot of the same name.

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CATTLEYAS
7330 C. Fancy Free x Empress Bells var. 'Otake' x Alice Shirai.
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7126 C. Rowena Prowe x Claesiana.
7131 C. Mossiae x Sunburst x Dowiana Aurea.
7199 Sophro Laelia Gustave Vinicke x C. Fred Sander.

NEW GUINEA DENDROBIUMS
7480 D. Taurinum x Ostrinoglossum x Taurinum x Ostrinoglossum.
7456 D. Green Hornet x Green Antelope.

DENDROBIUMS DARK LADY HAMILTON TYPE AND BICOLOR
6857 D. Lady Fay x American Beauty x Maui Beauty.
7278 D. Phal. F.C.C. x Lady Fay 'Alvin' x Lady Cleo x Lady Hamilton x A.M. Beauty.
7286 D. Lady Hamilton x Pompadour x Lady Cleo x Louis Bleriot x A.M. Beauty.
7289 D. Elaine x Lady Fay x American Beauty x Fukumura x Lady Dorothy.
7299 D. Lady Hamilton x Anouk x Lady Fay x Maui Beauty.

PHALAENOPSIS
6909 P. Grace Palm 'Capilola' H.C.C. x Juanita Fascination (white).
7497 P. Fairway Park x Doreen Kodama x Orleans Aiea x Lachesis (white).
7495 P. Red Fly x Judy Karleen x Lachesis red lip (white coloured lip).
7502 P. Lachesis x Mannii (yellow/cream).

VANDAS, ASCOCENDAS
7000 Vanda Boschii x Flammerolle x suavis.
7042 Vanda Rothschildiana x Miyamoto x Curvifolium.
7054 Vanda Rothschildiana x Diana Ogawa x Curvifolium.
7072 Asco. Meda Arnold 'Red' x Sanderiana x Meda Arnold.

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P. (Montgomery x Elinor Shaffer) x P. Lindenii. Stripes.
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Dpts. Coral Gleam x P. Lavender Lady. Pink.
P. Cover Girl 'I' x P. Doreen 'Kodama'. Red lips.
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V. Kilohana.
V. Rothschildiana. Blue.
V. T.M.A.
V. Beebe Sumner x V. Sanderiana.

Miniature Oncidiums
2" pot size $2.00
O. Catherine Wilson x O. Savannah 'La Mar'. AMHOS. Pinks.
O. Delight x O. Pulchellum. Dark pinks.
O. Savannah 'La Mar' x O. Pulchellum. Reds.
O. Calypso Queen x O. Stanley Smith. Light pink to sunset shades.

Ascocentrum of miniature Vandas
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3" pot size $2.50
Some in flower from $15.00
V. (Hilo Blue x Rhy. Coeleste) x Asc. Meda Arnold.
Asc. Tan Chai Beng x V. Mabelmae Kamehele.
Asc. Ophelia x V. Mabelmae Kamehele.
Asc. Yip Sum Wah x Aer. Lawrencianum.
V. Sanderiana alba x Asc. Ophelia 'Orange'.
Rhy. Wong Yoke Sim x Asc. Meda Arnold.

Anthurium
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Andreanum 'Red Imp'. A large red double flower.

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A PEEP AT WIDER WORLDS

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PAPHIO GROWERS! SOMETHING SPECIAL FOR YOU

The many enthusiasts everywhere will extend a very warm welcome to *The Paphiopedilum World,* an international magazine devoted to the *Cypripedieae.* The intention of the publisher is to make it easier for people around the world to exchange information about this genus and the ground covered includes species, hybrids, culture, awards, taxonomy, diseases, genetics and so forth. The magazine is valuable and interesting. It is published quarterly by John E. Wilson, 2865 Sheffield Rd., San Marino, California 91108 and the subscription is five dollars U.S. per annum.

AND SOMETHING FOR GROWERS OF ALL GENERA

Reference has been made in this column from time to time to informative articles in the *Bulletin of the Pacific Orchid Society of Hawaii.* That magazine has now been merged with another and the joint effort is the *Hawaii Orchid Journal.* It is published quarterly at a subscription rate of six dollars U.S. per annum payable either to the Honolulu Orchid Society, 1710 Pali Hwy., Honolulu 96813 or to the Pacific Orchid Society, Post Office Box 1091, Honolulu 96808.

THE PROGRESS OF THE CYMBIDIUM

Ernest Hetherington's opening sentence reads "The past is but a prologue to the future". This is the key to a fine contribution "American Cymbidium Hybridising Since 1960" with some quite beautiful reproductions of choice clones in colour. *American Orchid Society Bulletin* July 1972.

WOULD YOU GIVE YOUR BACK MOLARS FOR A PERMANENT RECORD OF THAT ONE PERFECT FLOWERING?

Then the only answer is the camera and the task is not quite the same as a snapshot of Auntie Flo. For the basic know how read Charles Mardon Fitch on "The Art of Orchid Photography". *American Orchid Society Bulletin* July 1972.

DO YOU GROW YOUR CATTLEYAS IN BARK?

Your plants may well have some dietary problems. It would be well worthwhile reading "Some Observations on Feeding Cattleyas in Douglas Fir Bark" by Mr. and Mrs. Jim Riopelle. *The Orchid Digest* Jan.-Feb. 1972.

WHAT IS A PAPHIOPEDILUM WITHOUT ROOTS?

Root loss in this genus is sometimes a problem. International authority Mr. Everett Wilcox discusses "Root Health in Paphiopedilums" with stimulating results. *The Paphiopedilum World* April 1972.

FROM THE PAST

Captivated by the idea of growing orchids on trees? Read "Of Trees and their Micro-climates" by Mr. G. Hermon Slade. *Australian Orchid Review* March 1962.

ON THE LIGHT SIDE

Fluorescent light growing is now well established in the U.S.A. and has its devotees in England and Germany. A few Australian growers are using it, particularly for seedlings. Now Mr. Del Hollenberg comes up with an idea to help fluorescent growers get the most value for their money. Read "Uniform Illumination with Fluorescent Lights" in the December *A.O.S. Bulletin,* page 1101.

RHAPSODY ON BLUES

If you would like the blues — true blues — then get the Nov.-Dec. *Orchid Digest* and turn to page 201 and read the article by Carson Whitlow titled "Fundamentals in Breeding for Blue *Cattleya* and *Laeliocattleya* Hybrids". You won't have the parents to dash madly off on your own breeding programme but this article will give you the lead on what parents to look for when buying seedlings.

FOR JUDGES & WOULD-BE JUDGES

For some valuable background info see the November '72 issue of *A.O.S. Bulletin* article "Some random thoughts on the judging of orchids".

HISTORY MINDED?

Then read Mr. David F. Sanders' "Day's Monograph on Orchids" in the September, 1972 issue of *The Orchid Digest.* The *Monograph* was compiled by Mr. John Day of Tottenham, North London, in the years from 1863 to 1887. The 53 volumes depict in monochrome and water colour 2824 species and varieties in 209 genera. Mr. Sander regards it as one of the most valuable assets of the Kew Herbarium. Each illustration is accompanied by copious notes. Mr. Sander thinks it is of greater value than *Lindenia* and *Reichenbachia.* The two latter have been published but not *Day's Monograph.* The expense would be tremendous but today's modern photo-lithographic printing process could do ample justice to John Day's wonderful drawings.

LADY FOR A LOVELY ORCHID

Who was Miss Joaquim of *Vanda* Miss Joaquim fame? This famous and beautiful hybrid dates back to 1893. Read the story in the September, 1972, issue of *The Orchid Review,* page 166.

INTERESTED IN ODONTOGLOSSUMS?

Who isn't these days — so give some thought to the intergenerics of which the Odontoglossum is one parent. Man made hybrids within this group have come up with some fascinating results — see Howard Liebman "Characteristics of Odontoglossum Intergeneric Hybrid Groups". *The Orchid Digest* — Nov.-Dec. 1972.

BRILLIANT CATTLEYAS

The Central American bifoliate *Cattleya aurantica* has produced jewel-like colours and sparkling texture in many of its hybrids and these have therefore continued to gain in popularity. Gene Crocker covers the field in "*Cattleya aurantica* and Its Hybrids". Beautifully illustrated in colour. *American Orchid Society Bulletin* — March 1972.

Is there a potter in the house?

"Potter" in this instance meaning someone with the skills to make ceramic pots. They can be bought, of course, usually with less than adequate drainage holes. First catch your pots — then grow a wide range of miniature orchids in beautiful containers. Professor Carey Miller tells us a great deal about suitable plants in "Some Miniature Orchids in Ceramic Pots. Flower Arrangements for the Home". *Bulletin of the Pacific Orchid Society of Hawaii,* Sept. 1970.

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V59	Den. New Guinea x Williamsianum	3"	sq.	pot	$2.50
V83	Den. Diane McFarlane. See coloured plate, A.O.R. Mar. '71 issue	2"	pot		$1.50
SS128	Catasetum Pileatum x Oerstedii	2"	pot		$1.50
SM105	Cymbidium Showgirl 'Malibu'. Miniature mericlone	5½"	pot		$7.50
SS118	Phal. Dos Pueblos AM/AOS x Scottie Maguire AM/AOS	2"	pot		$1.50
SS125	Rhyn. Gigantea 'Sagariks Strain' x Rhyn. Gigantea 'Selected Red'	2"	pot		$1.50
SMP7	Paph. Golden Acres 'Statley' AM/HOS x Denehurst 'Surprise' AM/AOS	3"	sq.	pot	$6.00
SS148	Den. Paleface x White Egret (white)	2"	pot		$1.50
SS124	Opsis Juliet Kimball (Vandopsis Gigantea x V. Sanderiana)	2"	pot		$1.50
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TEN ORCHIDS FOR THE BEGINNER

B. J. DUDMAN

Here on the North West Coast of Tasmania we have a mild climate, with average rainfall near 40 inches which mainly falls in the colder months May to September. People living in towns right on the coast receive only occasional frost in winter; while those inland would have more frosts, some of which are severe; and they require more protection for their orchids. Temperature range is mainly between 40° and no higher than 80°.

In compiling a list of ten orchids for the beginner I take into consideration that nearly all beginners do not have glasshouses or bush-houses but start their collection in sheltered corner of garden under trees or maybe an open verandah. Most of our new orchid growers have a collection of various pot plants growing in their houses, in sunrooms, covered verandahs, etc., so can use this protection for some orchids.

Number 1. *Cymbidium* hybrid.

These are the most popular orchids and form major part of orchid collections; they are easily grown in bush-houses or sheltered spot outside getting morning sun. I advise a beginner to have at least one flowering size plant so results can be seen the first season, giving grower added enthusiasm. Cymbidiums flower here between July and December.

Number 2. *Dendrobium kingianum* — or its hybrids.

These require the same conditions as Cymbidiums, and soon grow into specimen plants. They are free flowering and perfumed, Flowering season here is between September-October.

Number 3. *Dendrobium striolatum.*

Tasmania's only native Dendrobium and it enjoys the same conditions as above, growing in pots, baskets or on a slab of granite rock. The yellow flowers with white lip come in October.

Number 4. *Bletilla striata.*

The Chinese ground orchid is included in this list because it can be grown in the ground or pots; and plants are on sale at local shops each year late winter. This deciduous orchid flowers here in November-December.

Number 5. *Epidendrum radicans* — or reed stem hybrids.

This is an easily grown orchid for that sunroom or glasshouse as here it requires permanent shelter. These Crucifix orchids come in wide range of colours and some flower all the year, being at their best in Spring and Autumn. The beginner must realise that these orchids are seasonal growers and treat them accordingly with regular summer feeding and watering and dryer, warmer in winter.

Number 6. *Calanthe triplicata.*

A native terrestrial from New South Wales grows well in pots in bush-house; and the stems of white flowers appear January-March.

Number 7. *Coelogyne cristata.*

Patience is required with this one to let it grow into a large plant, as it dislikes being disturbed. It can be grown in shallow pot in bush-house and moved under permanent shelter in winter. The white flowers show from August to October.

Number 8. *Oncidium varicosum* or hybrids.

These appealing orchids have grown and flowered better for me when mounted onto a block of wood, this ensuring that you cannot lose the plant during its winter rest period due to excess water. They like plenty of water and feeding in summer and more light and dry in winter; the yellow and brown flowers show in Autumn and early Winter.

Number 9. *Zygopetalum mackayii.*

Grows well in pots and flowers regularly and freely in glasshouses here on the North West Coast of Tasmania. The purple and white, green and brown flowers are perfumed and bloom from August to October, and last up to 7 weeks.

Number 10. *Dendrobium nobile*—or hybrids.

I prefer to grow these plants in pots and hang them up in glasshouse giving them plenty of light and fresh air. They are seasonal growers liking heavy summer feed and water, and extra light and dry winter period. By hanging plants up the water quickly drains away and allows plants to dry out by evening. The mauve and white flowers appear from November to December.

All the above orchids can be successfully grown using local compost materials which are available within about 20 miles of each grower's home. The following items are used—Radiata Pine bark; Myrtle leaf humus; ordinary bush leaf humus; She-oak leaf humus; coarse sand (like gravel) and a variety of host tree branches or manfern slabs.

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MALLANA. Remake of this highly successful cross. Whites and yellows. 4" pots $2.00

RINCON 'CLARISSE' AM/AOS x EARLYANA 'STARLIGHT'. American import for May-June, whites, blushes and light pinks with good shape. 4" pots $2.75

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519 MELINGA 'HIGHBURY'. A beautiful June-July non-staining concolour green or yellow with stronger light. Good spike habit. Free flowering. One of our top commercial blooms. Two sizes ..... $5.00 & $10.00

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621 CHRISTMAS CAROUSEL 'EMERALD'. This clone flower with tall spikes of large ice green blooms which do not fade. Early flowering. 4" pots $7.50

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V. Onomea 'Best Blue' x Rhy. gigantea 'Petotiana'. Beautiful blue Rhynchovanda $3.00

Aer. lindleyanum x Asvda. Meda Arnold 'Vin Mar'. Blues and pinks on a small growing plant $3.00

Ascda. Tan/Chye Beng 'Sagarik No. 2' x V. Judy Miyamoto 'Sagarik'. Dark blues, small growth $3.00

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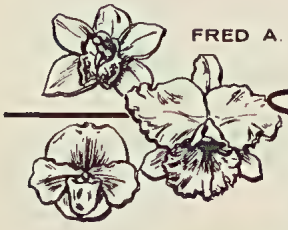
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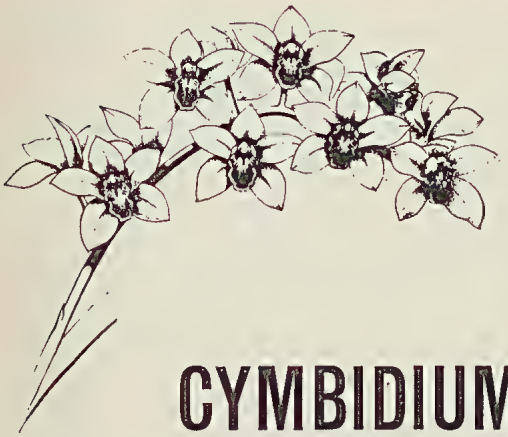
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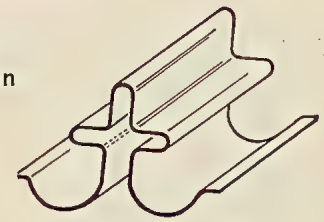
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Orchid names: A species of orchid has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

Small growing vandaceous hybrids have caught on with growers because of their innate charm and the fact that they yield so much in floral perfection from a small plant of neat growing habit. Two recently awarded plants of this type are illustrated. On the cover is *Rhynchovanda* Wong Yok Sim 'Blue Smoke' HCC/OSNSW, owned by Mr. Douglas Symons of Beecroft, N.S.W. *Rhynchovanda* is a cross between the genera *Rhynchostylis* and *Vanda*, the former a small growing genus in the subtribe *Sarcanthinae*. On page 69 is another fine example of this type, namely *Ascocenda* Meda San 'William Olive' HCC/OSNSW, owned by Mr. Harry Wight of Campsie, N.S.W. *Ascocenda* hybrids come from the neat and colourful *Ascocentrum* genus crossed with *Vanda*.

Present and Future for Miniature Cymbidiums

A letter from Mr. Syd Monkhouse

The Editor,
Australian Orchid Review.

Dear Ron,

In answer to your request to 'dash off a couple of pages on the current happenings with mini cymbidiums', I have taken a little time away from chasing builders, bugs and bills, to report a little on the current lines of breeding that we are pursuing.

A couple of years ago when that great champion of miniature cymbidium development, Paul Miller of California, decided that he was getting too old to retain his famous collection, we were, fortunately, able to obtain a fair number of his plants plus several of his last flasks of seedlings.

Breeding any particular orchid, with a view to developing a special line, is not a five minute affair and Paul devoted a great deal of his life to the breeding of miniature cymbidiums. We hope, that in a small way, we are carrying on a similar breeding programme — that is the development of a truly MINIATURE breed, with miniature mated with miniature and the influence of the large hybrids or miniature species, gradually falling further back in their family tree.

Do you know, the miniature cyms. are the most popular orchids in the nursery. We have a really difficult task in retaining sufficient numbers for our own requirements which makes increasing our stocks a difficult task. Mericloning and raising of increased numbers of seedlings in our new roomier nursery, will help bring the stocks of top miniatures to a figure where we can seriously attack the possibilities of developing an export business in cut mini. flowers.

Unfortunately, many crossings that we are trying, do not produce a great quantity of viable seed, however, we feel that perseverence with even a very few seedlings of any of these crossings could provide us with the quality parent plants that we are seeking.

The 'First Generation' mini (a standard cym. crossed with a miniature species) is well entrenched as one of the most popular orchids for interior decoration or showbench.

The 'Novelty' or 'Second Generation' cym. is also very popular and will certainly become a top cut flower when produced in sufficient numbers.

Our main aim is to cross First Generation minis. with Novelty Cyms. or Novelty x Novelty or First Generation x First Generation, with the object of producing or stabilising a small sized bloom in the Novelty section which will be round and filled in, have good spike habit and excellent texture plus an even wider colour range.

We have also used 'Novelty' cyms. with standard cyms. in an effort to produce improved parent material for our "new breed" of miniatures.

I have listed a few of our attempts at crossings with mixed results so far:

King Arthur 'Devan' x Mary Pinchess 'Sunbeam' — 12/9/71 — sterile, limited seedlings.
King Arthur 'Tiny Tim' x Southborough — 12/9/71 — sterile, limited seedlings.
Oriental Legend 'Su Itan's Pride' x Sussex 'Laelia Sasso' — reasonable germination.
Amesbury 'Camden' x Pearl Easter — limited germination.

Later efforts that are now in flask are:
Tommy 'Adelaide' x Sleeping Beauty 'Golden Queen'.
Gidget 'Zuma' (a red) x Mary Pinchess 'Sunbeam' (a yellow).
Showgirl 'Lily Langtree' x Mary Pinchess 'Sunbeam'.
Bob Norton 'Bimbo' (a 'madidum' hybrid) x Blue Smoke 'Green meadows' — the hope here is to produce Summer flowering hybrids.

We did lose many pods this year due to the nursery shift and an extremely hot summer without adequate housing for the plants.

A few seedlings raised from earlier crossings are:

Tigertail 'May Day' x Esmeralda 'Dorothy' — an interesting combination with the irregular flowering time of Tigertail and its lack of red pigment, combined with the pure colour Esmeralda.
Pelleas 'The Friar' a bright orange-red, crossed with Sensation 'Melita' expected to give very strong red to red orange colours.
Showgirl 'Can Can' x Sussex Dawn — the few seedlings produced will be exceedingly interesting.
Showgirl 'Kate Hepburn' x Esmeralda 'Dorothy'.
Lynette 'Artemis' x Balkis 'Kiwi' — we hope



Above:

Min. *Cymbidium* Mary Pinchess 'Sunbeam'. One of the parent plants used by Mr. Monkhouse in his minature breeding programme. The yellow colour and bold display denote interesting possibilities for its progeny.

Photo: S. Monkhouse



Right:

Ascocenda Meda San "William Olive' HCC/OS NSW. Owned by Mr. Harry Wight and awarded in March last, this clone exemplifies the attractiveness of small growing, vandaceous orchids. Flowers are 5cm (2") across the petals.

Photo: A. B. Porter

that the unusual deep apricot shade of Lynette will reappear.

We look forward to flowering some of the Miller seedlings such as:
Showgirl x Sylvia Miller (two second generation parents).
Sweetheart x Sylvia Miller (first and second generation combined).

We plan to accelerate our 'mini' breeding during the next few years and perhaps this small report will give an indication of the type of breeding we are planning. With most hybridists disappointments just make them more determined and certainly in this type of breeding programme results are often very disappointing.

Other hybridists are undoubtedly pursuing different theories and in the combined result we will see mini cyms. with almost 12 month long flowering range, an even greater array of colours than at present, and better textured flowers.

Well, Ron, we are sealing our car park area tomorrow and there is some tractor work to be done now. I have enclosed a colour slide of Mary Pinchess 'Sunbeam' from which we anticipate great things. Yellow is not a common colour in minis. and we hope that this clone, which is fertile, will help us to develop this colour.

Looking forward to seeing you and all our orchid friends at the 3rd. Australian Orchid Conference in Adelaide this September — we will try to coax a few minis out into flower to show you.

Now, back to the tractor,
Sincerely,

Syd. Monkhouse,
P.O. Box 26, Plympton, S.A. 5038

ORCHID SOCIETY OF W.A.

Mr. C. W. Connor receives Life Membership

Sixteen years' service as hon. treasurer of The Orchid Society of Western Australia ended when Charlie Connor advised that he would be unable to stand for office this year, having accepted a vocational advancement which needed his full time to mould the department to his standards of efficiency.

Charlie steered the Society's finance from a sick purse to a sound healthy one and during those sixteen years his experience and advice was a great help to the many officers of the Society who worked with him.

At the annual general meeting, members showed their appreciation of his valuable work for the Society by unanimously voting to bestow Life Membership on him.

Congratulations Charlie, good orchid growing and best wishes in your new office.



Photo: Charles Taylor
Dendrobium discolor growing on a teak post in the world famous Orchid garden of the University of Papua New Guinea. There are more than 50 flower spikes on this plant.

PAPUA NEW GUINEA ORCHID SOCIETY

International Show and Conference

CHARLES TAYLOR

It was a great achievement for members of the PNG Orchid Society to stage an International Orchid Show in only their second year.

The Show took place in the Military Hall situated in the University of Papua New Guinea grounds. Around the large entrance steps were large pots of gayly coloured Bougainvilia.

On entering masses of New Guinea native orchids presented a fascinating sight. One which immediately intrigued was *Hyalosema grandiflorum* (syn. *Bulbophyllum grandiflorum*) a beautiful golden bloom with dark red-brown spots and a curved dorsal. Several plants of *Dendrobium lawesii* glowed in brilliant reds. An outstanding specimen of *Dendrobium discolor* (illustrated) had over 50 spikes up to two feet long.

My gaze was truly held by a beautiful raceme of red flowers on *Ascoglossum calopterum,* a species rarely seen in Australia. A great vandaceous orchid with many golden-brown flowers on a six foot long spike proved to be *Vandopsis muelleri.*

A very attractive section was the class for six native *Dendrobiums.* This was won by Mrs. Andree Millar. The Champion of the Show was a magnificent spike of *Dendrobium ostrinoglossum,* the famous Sepik Blue, also owned by Mrs. Millar.

The social side was well organised. It included a Cocktail Party, and an Official Dinner with the Administrator, Mr. L. W. Johnson, and his Lady as guests, and over 100 present. Society President, **Mr. David Dowd kept events running smoothly.**

Undoubtedly the most pleasing feature of the Show and allied social functions was the active and important part played by many Papuans and New Guineans whose participation contributed greatly to the success of the Conference. There is no doubt they were proud of their country and their native orchids.

Registrants included the President of the A.O.C. Mr. J. Mackinney. 39 *Addison Ave., Roseville*



Drama at Encounter Bay

On the eighth day of April, 1802, two warships of opposing nations faced each other across the waters of a lonely bay.

There was a tenseness among the crews. Only a few months before the French ship had passed through the English blockade. The English captain was not aware that the Peace of Amiens had been signed only a few days before and he knew only that he was facing an enemy.

Guns were readied on the English ship and her captain manoeuvred for the best tactical position. All the while he was appraising the other vessel for signs to confirm his first suspicions: Was this *Le Geographe,* ship of Captain Nicolas Baudin?

Until he could be sure the tenseness could explode!

Captain Flinders watched as the French ship shortened sail, identified herself, and dropped anchor. Then, with his naturalist Mr. Robert Brown, he rowed to the other vessel. At that time the British and French reverence for science was such that, even though they were at war, they had exchanged passports for their ships of discovery. Their captains and naturalists met on terms of mutual respect as explorers and scientists.

During your trip to the Third Australian Orchid Conference you can journey to Encounter Bay and stand on Rosetta Head, better known as The Bluff, near a monument commemorating the meeting and view the magnificent expanse of the bay, and, if the weather is fine the mouth of the River Murray may just be visible.

Captain Flinders named Mount Lofty, Spencer Gulf, Backstairs Passage, Kangaroo Island, and Mt. Brown — a peak in the ranges at the head of Spencer Gulf climbed by the naturalist. Flinders etched himself into history by circumnavigating Australia. Robert Brown produced the first great systematic study of Australian plants, including the naming of 114 of our orchids.

Colonial Australia is the theme for the Third Australian Orchid Conference Show. South Australia is rich in historical episodes like the meeting at Encounter Bay. You'll see some of these facets of history symbolised in the Show decor. Facets like Old Man Murray in the riverboat days; the heartbreak mining days; the magnificent Victorian mansions of the Adelaide Hills; and deserted homesteads of the Flinders Ranges.

South Australia is noted too for its contributions to orchid science by its great citizen, Dr. R. S. Rogers, who devoted vast energies to public and professional life, yet found time to produce books and write numerous papers on orchids.

The Third Australian Orchid Conference Programme includes lectures, tours, wine tastings, social activities, and a banquet. There'll be orchid folk from overseas and faraway States with whom to exchange ideas and good fellowship. In short, all the atmosphere of a mini world orchid conference at a fraction of the cost.

GET WITH IT

Register now for this holiday of the year, week beginning 23rd September. Tours prior to and following the Conference have been arranged. Register before 30th June at $10 single or $15 double (after at $12 and $17.50). Send your cheque now to The Secretary, Mr. Keith Yates, 452 Seaview Road, Henley Beach, S.A. 5022. For information on accommodation and special events contact Mr. Neil Christoph, 18 Clinton Ave., Myrtle Bank, S.A. 5064.

If you wish to stage an exhibit send your application immediately because applications close 30th June. Prize monies and trophies are in excess of $1500 in value. — R.K.

AN INTRODUCTION TO ORCHIDS

JOHN LONGDEN

Mr. Longden is Secretary of the Tasmanian Orchid Society. This article is from a paper given at the Second Tasmanian Orchid Conference and is of vital importance to all new growers.

To the beginner, the culture of the many different orchid genera can be rather confusing however, it is not difficult once a little is known about the growth habit of a particular genus.

The optimum or best growing conditions can be obtained by duplicating as nearly as possible the conditions the plant enjoys in nature. If a plant normally lives on the bark of trees in a warm climate, relatively shaded, then it should be grown in a heated, shaded glasshouse, potted in bark and not a cold, exposed position, potted in soil. In nature, the orchid has adapted to the particular environment in which it lives. For example, the plant living attached to the bark of a tree has developed a sponge-like root which acts like blotting paper to catch every drop of dew, moisture and rain which is then held ready for use.

What actually is an orchid? The classification of plants is based on certain definite arrangements of their various flower parts and orchids are all built on the same plan. Looking at an orchid, you will see there is an outer circle of three sepals. The upper one is called the dorsal sepal and in some genera is quite different to the two lower latteral sepals. Within the sepals is a circle of three petals of which two are exactly alike, while the third usually the lowest, is modified to some degree and is known as the labellum or lip. In different groups or genera, the lip or labellum may be highly modified.

The centre of the flower contains the column which is frequently enveloped by the lip. This column, consisting of united stamens and pistil is the organ for reproduction. If there is any major point which makes a certain flower an orchid, it is the characteristic of the column. Near or on the top of the column is the anther in which is contained the pollen masses or pollinia. The majority of orchids have one anther however, the genus Cypripedium has two, one on each side of the column. Underneath the anther is the rostellum which provides a fast setting cement that comes into contact with nectar-seeking insects and the pollinia becomes attached to this sticky substance on the insect which creates an opportunity for cross pollination. Below the rostellum is the stigma or stigmatic cavity, being an area covered with a sticky substance which receives the pollen masses transferred by the insect from other flowers. At the base of the column is the ovary containing thousands of ovules which when fertilised by union with properly developed pollen grains, form the orchid seed.

The orchid flower due to the different environments in which it has evolved is very diverse in shape and colour, varying greatly from the large showy Cattleya from South America to our own small ground orchids. All orchids may be divided into several categories due to certain fundamental plans in the structure of the orchid plant based on their mode of growth. First is the sympodial orchid, a growth form most commonly found in the orchids Cattleya, Cypripedium, Miltonia and Odontoglossum. There are many variations to the basic pattern however, this type consists of roots, rhizome, stem or pseudobulb leaves and flower spikes. All these parts may vary considerably in form from genera to genera but perhaps the most varied organ is the pseudobulb. It may be long and club shaped as in the Cattleya, round and rather disc shaped as in the Oncidium and Odontoglossum or pear shaped as in the Cymbidium. In some genera, the pseudobulb is absent as in the Cypripedium, Phalaenopsis and Vanda. The sympodial growth begins as a bud at the base of the previously matured pseudobulb and develops to maturity, terminating its growth in an inflorescence or flowering thereby making each growth complete in itself.

The other main category of growth is the monopodial orchid where the growth is continuous and there is no clear demarcation between the growth of each season. There is a main axis which grows at its tip producing new leaves continuously and sending out inflorescences or flowers from within the base of the leaves as in the Phalaenopsis and Vanda.

Orchids may be divided in four cultural classes based upon the root system and these are as follows.

1. Epiphytic

Epiphytic orchid are those which have all their functional roots exposed to the air. The roots in the substratum merely act as anchors to hold the plant in position. These plants are

usually found on the branches of trees and lofty vertical rock faces. Epiphytic orchids are not parasitic as their roots do not penetrate the tissue of their hosts. Nutrients are obtained from the air and from decaying fragments of organic matter that are washed down to them by the rains. The roots of these orchids are surrounded by a thick, spongy epidermis known as the velamen. The Phalaenopsis is a typical example of this group requiring perfect drainage so that a coarse, open potting media such as large pieces of bark would be a perfect growing media.

2. Semi Epiphytic

There is not a great deal of difference between this group and the former however, a part of the active root system functions beneath the surface of the substratum while some of the roots are aerial. Most of the Cattleyas and allied genera are usually classed as semi-epiphytic requiring extra firm potting in a free draining compost such as osmunda fibre or medium bark.

3. Semiterrestrial

Orchids which grow in nature with their succulent roots in the rich, porous, leaf mould of the forest floor fall into this group. Cymbidiums and Paphiopedilums are usually considered semiterrestrial and are successful grown in a friable mixture of bark, leaf mould, charcoal, peat, coarse sand and similar materials.

4. Terrestrial

These are the true earth-dwellers with wiry roots like garden plants and require a mixture with more loam that resembles the soil of the native habitat. The majority of the Tasmanian Native Orchids fall into this group and it is always best to pot these plants in the soil in which they are found growing in nature.

To commence growing orchids it is suggested a genera or a few genera be selected that appeals and preferably ones that grow in a relatively cool climate such as the Cymbidium, Oncidium or our native orchids. In determining the type that would be suitable, there are many factors which would influence the grower's decision. Firstly, once you have selected a genera, for example, the cymbidium, you would have to consider the following points. Where will the plants be grown, in the open, in a shadehouse or in a glasshouse, all of course would be suitable provided the plants receive the correct amount of sunshine of approximately 50%, sufficient water to keep the compost damp and allow the plant to assimilate the nutrients either contained in the compost or administered in the watering programme.

It is not necessary to have a glasshouse to successfully grow orchids as the cool growers can be kept outdoors provided there is some shade during the summer months. This could be supplied by a tree, a bath screen or the woven shade cloths available. It would be advisable to purchase one of the excellent booklet publications at about fifty cents which contains all the information new growers require to successfully commence growing. The next thing to consider would be the available sources of plants and what size and variety to purchase. In the early stages it is recommended that flowering size plants be obtained and preferably seen at the time of flowering so you know what you are buying. By purchasing a few of flowering size plants at the outset, you are certain of satisfaction in the following season. The numbers of plants secured will naturally be limited by the space you have and the available funds. A good idea is to obtain catalogues from the various nurseries to gauge the market price of seedlings, mericlones and divisions together with the crossings available.

The basis of a new collection should be several or more flowering sized plants of whatever genera has been selected. Then should be considered the most desirable manner of increasing the stock with good quality and potential plants. Several choices are available to growers and these are divisions, back bulbs, seedlings and mericlones. By obtaining a division or piece you know what you have purchased however, these will probably be the dearest from approximately $5.00 upwards. A back bulb has the vegetative qualities but it will be several years before it reaches a flowering size and should cost from fifty cents upwards. Seedlings offer the opportunity of obtaining a plant that no one else has as each is an individual plant and a prospective champion determined by the parents. These should be procurable from $2.00 upwards depending on the size.

The mericlones which are vegetative propogations of a particular plant are now becoming freely available and as the numbers increase the prices are being reduced. These plants enable the grower to obtain the champion of the last few years ago that will flower true to the original. There is definitely a place in your collection for this type of plant however, the majority are usually smaller than seedlings and it is recommended that the larger sizes be pur-

chased of say at least 12"-18" leaf length for a Cymbidium for which the price would vary from about $5.00-$15.00. There are many opportunities to obtain first class plants and if you wish, it is possible to hybridize raising plants from seed.

During your visits to the orchid growers' glasshouses, you will see several forms of glass and bush house constructions which together with voluminous information in the books available at the libraries will enable those who have not already their own facilities to decide what form they wish to use. It may vary from a simple bush house constructed of timber with lath covering similar to the summer house of yesterday to an elaborate metal framed glass house with automatic controls for heating, ventilation and watering.

To increase your knowledge and appreciation of orchids, obtain the various journals and newsletters from the Societies which should be in the local Society library and read the items that interest you, attend the local Society meetings, participate in the various activities and ask the experienced growers questions about any aspect of orchid culture.

Orchid growing can be most rewarding as an absorbing hobby, offering a challenge, as well as providing friends and fellowship. The enjoyment received is usually proportional to the effort extended as anything worthwhile requires a certain amount of attention and orchids will definitely respond to this.

First of its kind

Quite a number of members of the West Brisbane Orchid Society felt they would like to learn more about the orchid species, and the only way to do this was to form a discussion group, or study group — this was achieved towards the end of 1972 — However, there are so many folk — interested in learning as well as making an effort to conserve the species, that this study group has now been formed into a society — to be known as THE ORCHID SPECIES SOCIETY —

From what is known, it would appear that this is the first species society to be formed in Australia — However, should this be incorrect, we would like to learn more, and invite anyone to communicate with us.

Foundation President	Mr. H. Young 18 Bella Vista Tce. Paddington. Ph. 36-1328
Treasurer	Mr. F. Smith 72 Chaprowe Road The Gap. Ph. 30-1050
Secretary	Mr. D. Carnegie 4 Punica Street, Inala.

The Society meets the 3rd Monday in each month — at present at the West Toowong Bowls Club — Bywong Street, Toowong. New members and visitors welcome.

MORNINGTON PENINSULA O.S. HAS FIELD DAY

Members learn cultural secrets

A pleasant autumn day favoured the 15 members and 3 family guests who enjoyed a very informative day visiting the orchid houses of Mr. Dave Morgan, McBean's Orchids of Australia per courtesy of Mr. Russ Martin, and Mr. Bob Evans, who deserves a vote of thanks for suggesting the trip. The two largest establishments were Mr. Morgan's and McBean's.

Mr. Morgan has four hot houses for the cultivation of the more exotic genera such as Hard Cane Dendrobiums, Cattleyas, Vandas, Phalaenopsis, Odontoglossum, etc. He uses three automatic oil fired boilers to heat three of them, and a bottled gas unit for the other. The size of the houses and the number of plants were staggering, and those that were in bloom were certainly worth the effort of making the visit. His cymbidium house was enormous, with plenty of open air. It was interesting to note that he used all sorts of pots — terra-cotta, plastic and tin tubs.

McBean's house was crammed with thousands of Cymbidiums, and we were shown the method of raising the seedlings and mericlones straight from the flask through the many stages up to flowering size plants; in fact 16-month-old seedlings with flower spike. Many of their plants were well out of their sheaths, and it was obvious that many would bloom very soon. The one aspect that amazed us all was the amount of water in the pots; if they were mine they would turn up their toes. Maybe mine have never learned to swim, but Russ Martin's stock were certainly doing very well under these conditions.

Mr. Bob Evans demonstrated what could be done with limited space, although he grows other genera, he concentrates on cattleyas, which he grows from seed to flowering plant. His house is heated by means of a natural gas boiler, and in the warm time of year he has the thermostat set at 60° but during the winter months this will be dropped back to 55°. His cymbidiums are grown in a Sarlon covered shade house, and there was a profusion of spikes in evidence.

A feature of all houses was that they all incorporated mist spraying attachments which are used for watering until the spikes are out of the sheaths and for cooling purposes during the hotter months when the houses tend to become overheated.

Cold Country Epiphytes

NORMAN R. JONES

At the mention of Orchids, the mind of the average person will usually envisage these in two categories — tropical zones for epiphytes and temperate for terrestrials.

Tasmania can by no means be described as tropical so it often comes as a surprise to many to learn that not only is Tasmania well endowed with terrestrial orchids, having over twenty genera and about 140 species, but that we also have two representatives of the epiphyte groups — *Dendrobuim striolatum* and *Sarcochilus australis*.

The latter, popularly known here as "Gunns Orchid", is of special significance to Tasmanian enthusiasts, it being reported that it was first discovered in Tasmania by Ronald Campbell Gunn and thereafter being found in other South Eastern Australian States, including Bass Strait Islands and as far north as Southern Queensland.

In Tasmania, as in other States, the areas where it may be found are very limited. Such places are the Pieman River on the West Coast where it is likely to be in danger from the Hydro-Electric Commission's power schemes; Smithton District on the North West (if indeed, it still exists there) and a small colony on the East Coast. It is fortunate that this last mentioned is on private property where the owners are mindful of its conservation. It is even more fortunate that only a handful of people know of its exact whereabouts. This is in two moist and heavily shaded gullies at about 400-500 ft elevation, each containing a small colony extending for about 200 yards. Nevertheless, the population of these colonies is fairly numerous, the plants being found in all sorts of situations on tree trunks and thin branches, even to very insecure positions among the extremely thin twigs and leaves of Prickly Box, which tree it seems to favour. Musk and Tea Tree have a lesser share.

In contrast to mainland forms of *Sarcochilus australis,* the local plants are more amenable to culture, although great care must be taken to duplicate their natural environment. Very few glass houses would be satisfactory for them, as they are essentially rain forest plants and require a cool, moist and heavily shaded position in conditions such as provided by a bush house or fernery, where rain has full access.

In dry spells frequent spraying is necessary,



Sarcochilus australis. Approx. same size

although in nature they can survive droughts. Any fertilizer suitable for epiphytes may be applied in weak doses.

The outlook for *Den. striolatum* is somewhat brighter, although this too is by no means over abundant. This plant extends through the Eastern States from Freycinet Peninsula in Tasmania, Bass Strait Islands to south of Newcastle in N.S.W.

Whereas there seems to be little difference between Tasmanian and mainland forms of *Sarc. australis* the local *D. striolatum* is a little larger in the flowers and generally with a deeper yellow colouring and more robust leaves.

In this I believe our climate is an influencing factor. Dendrobiums normally enjoy a dry winter followed by a wet summer, but in Tasmania almost the reverse applies, our winters and spring seasons are usually wet.

On occasions, following a winter lacking in rain, I have always found the plants in their own habitat to be in poor condition and flowering very sparse.

The survival of this species in Tasmania seems reasonably certain, growing as it does on huge outcrops of almost smooth granite; one would need to be a mountaineer to get them.

Only where they grow in more accessible positions is there any danger to them.

Cultivation is fairly easy — a cool situation in good light and attention to watering, plus fertilizer in discretion. A slab of granite or sandstone with a little leaf mould sieved among the roots will suit it nicely, or it may be grown in a well drained pot. It will also take well to a thin slice of soft fern, preferably in an upright position.

4 *Derwent Ave., Lindisfarne, Tas.*

INTRODUCTION TO A SERIES ON ORCHID HOUSES

Housing is a way of growing

RONALD KERR

For the past six issues articles have covered some aspects of heating glasshouses under Australian conditions. This new series will examine types of growing houses and the cultural needs they fulfill. Readers are invited to send black and white photos or transparencies of their bush or glasshouses, together with information on the genera grown and mode of cultivation. Photos should be sharp for reproduction.

Housing and housekeeping are the two fundamentals of orchid growing. The first determines what orchids we can grow, the second how we grow them.

It is impossible to consider housing without considering culture. At square one orchids can be grown without a structure for their use. These will be the species specially suited to the climate of one's own area. We may grow them in the garden on rocks or trees, or even in flower beds.

In the Sydney area for instance *Dendrobium speciosum* has long been a garden subject. Similarly, many North Queenslanders have fastened *Dendrobium bigibbum* to posts and trees in the backyard, or planted Vanda aerials hedge fashion along a fence.

A careful grower can achieve interesting — often very rewarding — results in this way. Every yard can have more than one microclimate: a northern wall can be a suntrap against which sun-lovers will thrive; a southern wall may prove ideal for delicate species of *Sarcochilus*. A dedicated grower could adapt quite a range of species to garden conditions. But long before exhausting such possibilities he will have decided that mere garden conditions are not enough, and the only satisfactory way to grow orchids is in housing designed to meet their needs.

The task of blending orchids into a garden layout can produce spectacular results, but eventually the occasions when snails, insects, even birds, spoil eagerly awaited blooms becomes too frequent.

Most new growers miss the garden stage and graduate straight to a bush house. This at once gives greater control over culture. Pest control is simplified, watering can be more specific, the plants' conditions and needs become more quickly apparent, and flower spikes can be better protected.

The range of genera which can be grown in a bush house can be very wide in tropical areas, but with epiphytes the potential decreases as distance from the equator increases. Only in rare places, like parts of the Atherton Tableland in North Queensland, can practically the whole range of genera be grown under bush house conditions.

Thus those growers who become constrained by the urge to grow bigger, better, and more unusual orchids, must think in terms of artificially creating the micro-climate, or climates, suited to the needs of the genus, or genera, they wish to grow.

If the bush house is the lowest rung the next step is to the protected bush house, then the cool glass house, hot house, and finally the automated, controlled climate, growing house.

The possibilities are endless if you have the money. Here most of us are forced to compromise — but of course the whole process of growing plants thousands of miles away from their natural habitat is one of compromise. Mother Nature has dumped us in the middle of one set of conditions and we must bend these a little to suit those lovelies we are determined to grow. Nevertheless a careful horticulturalist can generally grow plants that look better than their counterparts in the wild.

Ideally the complete orchidist could use a range of fully automated growing houses. These would enable him to grow practically any orchid and still take a week or two holiday without undue worry about his plants.



A naturalistic garden setting at Girraween on the Comboyne Plateau, near Port Macquarie, N.S.W. The tree is covered in staghorns and several species of native orchids.

Photo: Ronald Kerr

A range of such houses would comprise:—

1. An insect proof bush house with an automatic misting system, and a watering system adjusted to fertilizing cycles.
2. A cool glass house with all of the above plus evaporative coolers.
3. An intermediate house with all the features of 1 and 2, and a controlled temperature range of 12°C. (55°F.) to 27°C. (80°F.).
4. A hothouse with all the above features and a temperature range of 18°C. (65°F.) to 32°C. (90°F.) plus humidity control set for high relative humidity.
5. A hot house as 4 but set for intermediate relative humidity.

An establishment with this range would also need a flasking room, potting shed, and seedling growing house.

Most growers do extremely well with only a fraction of this equipment. They do well because personal care — oftimes known as TLC for Tender Loving Care — takes the place of automation; and improvisation the place of a range of houses. In fact automation is a danger unless a grower has first gained the experience of doing well without it.

And who needs to grow everything?

There is intense satisfaction and pleasure in doing the best one can within the resources available. Coupled with this is the need to plan for development: a bush house to-day and a cool glass house to-morrow.

A hobby which is static is no hobby because all of us have an inbuilt urge to expand our interests. Growth is the basic law of life!

It is the virtue of orchids as a hobby that they can satisfy this need for a lifetime. We may start with an easy to grow genus and gradually expand into others until we have blooms all round the year. We become students of geography because a knowledge of where and under what conditions orchids grow is a part of culture. We can become involved in their botany and classification, and though this, in their evolution and history. And they can lead us into pleasant social paths at societies and shows.

They can keep us intrigued while we wait for new seedling buds to emerge, or make us glow with anticipation as we carefully nurse a champion-like raceme for the show bench. They can afford us complete relaxation as we gently appraise the progress of each plant. Best of all they give us a feeling of achievement when we show them to our friends or to the public.

The building of orchid houses becomes more than a matter of timber, metal, and glass or shadecloth, because housing is a way of growing. We cannot divorce the two. No house should be built without knowing the cultural requirements it is intended to satisfy.

In the next issue the basics of bush house constructions will be discussed. Readers are invited to send photographs of their bush and glass houses, with brief details of their construction and the range of genera grown, to the Editor at:

57 *Mount Pleasant Ave., Normanhurst* 2076

Specimen Plants in a 4" pot

BILL PAMMENT

In 1868, when Mr. Carl Kramer was roaming around the high country on the Pacific slopes of the mountains in Costa Rica, he found an orchid gem which was later called *Odontoglossum krameri.*

I first saw, and was fascinated by, this orchid, in a friend's glass house and decided then and there that small orchids were for me (incidentally, this same "friend" killed this orchid, by trying to propagate it faster than it could grow).

Eventually, I got my plant of *O. krameri,* also its country cousin, *O. krameri v. alba,* both of which just do not look real, *krameri* with its delicate lilac shading on a white background and *alba* with its pure white, look as if they are made of glass.

To these two I have added *O. cervandessii* with its quaint circular markings, the beautiful *O. rossii* with its pink colouring and *O. Insleayi* which is a smaller version of O. grande but with more intense colouring. I have quite a few more Odont's, but since this is a discussion on small plants, a specimen plant in a 4" pot, the others do not qualify.

Among a few plants I have acquired from Formosa is *Ascocentrum pumilum,* a matured plant in a 2" pot, with its small but pretty rosy lavender flowers in the winter, *Eria matsudai* with small spikes of blush pink flowers with a golden lip, these show up in the spring, *Diproprora uraiensis,* one of the pendulous type with buff coloured flowers and a white lip. It flowers in the summer time and is quite long lasting.

Bulbophyllum transarisanenis has only a small, single leafed bulb, about one inch long, but, produces a single Cymbidium shaped greenish flower with a large waxy white lip almost two inches across. This is quite a good effort for a small plant.

Halcoglossum quasipinifolium is a small growing terete vanda type plant, producing, for its size, a fair sized pinkish white vanda type flower with a vivid yellow blotch in the throat. Flowers appear in the late winter or early spring.

Most Formosan orchids seem to prefer the intermediate glasshouse where the minimum temp. is around 55° in winter, the *Odontoglossums* are in this house also, which has automatic controlled fans and humidity which is kept at about 60%, free movement of air over these orchids is a must at all times, they just will not tolerate a stale atmosphere.

From Madagascar came *Aerangis citrata* where it seems to be a fairly common orchid, but its lovely pendulous spikes of white flowers with its short spur at the back are very nice.

Professor Kraenglin found another gem of an orchid, called *Aerangis rhodosticta,* at a place called Yaunde — in Cameroun — in Africa, this is identical with *A. citrata,* except for the column which, in *A. rhodosticta,* is a vivid cinnabar red and very outstanding against the white background.

From the cooler parts of Mount Kenya comes *Aerangis friesiorum.* This plant grows pendulous and the sprays of white flowers with a fairly long white spur cascade down from the plant and make a very pleasing display.

Aerangis biloba from Tropical West Africa is white also but the spur is an orange red, this is a good contrast with the bloom itself, the flowers appearing late winter to early spring.

Perhaps it would be asking a bit too much to expect *Stenoglottis fimbriata* to grow in a 4" pot but it does very well in a 5" pot. From South Africa, it produces a rather long erect spike of rosy mauve flowers with red spots and a very odd shaped, seven pointed lip. It flowers in the Autumn.

Angraecum distichum, from Africa, that seems to shoot branches out, from the main growth, at any old time, and as fast as it grows it flowers, these are a lovely white which always seem to appear upside down.

Angraecum compactum, also from Africa, resembles a miniature strap leaf vanda and has very pretty creamy white flowers in much the same way as a vanda except they are usually single flowers.

An odd little orchid that doesn't seem to be too common is *Bulbophyllum sandersonianum.* This sends up a single flower spike from a small globular shaped bulb about three quarters of an inch in diameter. The spike grows about five inches long and the top two inches becomes quite flattened from which

emerges about a dozen small dull red flowers with an edging of silvery hairs giving it a very unusual effect.

Of all the countries that are fortunate enough to include orchids in their flora, I think Brazil has some of the loveliest, as far as colour goes, plants like *Cirrhaea dependens* with its pendulous spikes of golden yellow flowers spotted orange red, and the shy little *Ornithophora radicans* with its little white flowers and yellow lips. While *Sophronites coccinea, Sophronites cernua, Laelia milleri* and *Laelia cinnabarina* all with their varying shades of vivid red surely leave little to be desired.

To contrast these we have *Laelia flava* and *Stenocoryne vitellina* which are a very bright orange yellow, and *Leptotis bicolor* which is white with magenta tips on the flowers, also *Leptotis unicolor,* a very startling violet rose. *Lanium avicula* is creamy white and light mauve and *Rodriguezia venusta* is such a pretty white with a bright yellow disc on the lip.

Let us also not forget to mention *Promenaea xanshina,* its cymbidium shaped flowers of yellow spotted red are a sight to see. Its brother, *Promenaea stapelioides* is greenish yellow with a lot of purple spots and a purple lip that looks like it was made out of velvet.

Neolauchea pulchella may not stay very long in a 4" pot but its rosy red flowers in winter would surely compensate for this, and last but not least, *Oncidium concolor* with its bright canary yellow flowers in summer, must weave a pattern of colour that would make Brazilian orchids hard to beat.

Next to Brazil I suppose Mexico must be a close second, with such plants as *Epidendrum mariae,* a lime green with a stark white tubular lip; *Epidendrum polybulbon* has yellowish brown flowers with red stripes; *Palumbina candida* produces its spikes from the half grown new growth and its lovely white flowers with a yellow throat resemble *Ceologyne flaccida* and always seem as though they have just been washed and scrubbed.

Nageliella purpurea sends up long wispy spikes about 18" long and then produces a series of very pretty, small, purplish red flowers with an unusual concave shaped lip. As one flower dies another takes its place, the flowering period covering many months.

Notylia xyphophorus is probably one of the smallest orchids I grow, a fan shaped orchid only about one inch high, yet, it sends up a spray about 6" long with about a dozen, spidery, mauve and yellow flowers about three quarters of an inch long. This surely must rate as an all time effort for such a small plant. Then again, it could be the nature of the brute, because its brother (or should I say sister) *Notylia barkeri* has a small bulb of less than one inch but develops a twelve inch pendulous spike with more than one hundred pretty green flowers and its is not uncommon to get two such spikes from a happy bulb.

Two other Mexican orchids that are worth mentioning, have a very unusual habit, *Hexisea bidentata* has vivid orange red flowers and *Scaphyglottis lavida* with its rather small pale green flowers has the quaint habit of extending its growth from the terminal end of the last year's growth, giving them an effect like a string of sausages. This series of growths then become pendulous because of its growth and weight. It is not uncommon for *S. lavida* to produce four to five new growths from the top of the last bulb. After a couple of years at this rate, while the base of the plant is still in a very small pot, the top has become quite top heavy with a very fair size clump of bulbs.

The 'Lady of the Night' orchid, *Brassavola nodosa,* with its yellowish white long lasting flowers has a very pleasing perfume at night.

Epidendrum ochraceum is one of those orchids that seem to grow like a weed and flower the same way. Its short, erect spikes have about a dozen greenish brown flowers on them and as each flower seems to pollinate itself the plant ends up with a very large quantity of seed pods that look different, to say the least.

From Jamaica came *Oncidium leiboldii* with its pinkish white segments and a purple brown lip. Also *Oncidium letrapetalum* — chestnut red and yellow bars and a white lip; *O. triquetrum* — brown red with a buff edge; *O. pulchellum* — a lovely rosy red; and *Broughtonia sanguinea* — that delightful little, well-shaped bright red flower that seems to appeal to all that see it. *Oncidium cheirophorum* from nearby Costa Rica which has masses of concolour yellow blooms.

Bulbophyllum medusae — of Borneo — with its mop-like head of creamy white flowers; and *Bulbophyllum longissimum* — native to Thailand — with a pendulous mop head, about nine or ten inches long of pale creamy green flowers, just do not look like orchids at all.

Of all the nice "little" orchids I have, I think one of the ones that fascinates me most of all is *Dendrobium arachnites* — Burma — the plant only grows a few inches high and has the flowers two at a time from the nodes. These flowers are a very bright cinnabar red, the strange scoop shaped lip, which is heavily veined in deep purple, protrudes straight out from the rest of the flower — its beauty is just unbelievable.

From Mount Hagen — New Guinea — I got a small plant of *Dendrobium pseudofrigidum*. I believe that is the name of the plant, although I have not been able to positively identify it, anyhow, I find this little one seems to grow most of the year, when one bulb gets about half grown it starts off as many as three new growths. which in turn repeat the cycle, then in the winter all the growths that have matured burst into pretty bright red flowers that last for many weeks.

Aerides japonicum — Japan — with its beautiful lemon scented greenish white flowers with lavender bars and *Neofinetia falcata* with its brilliant white flowers with the long spur at the back are two worthy plants in anybody's collection.

Guatemala produces the most rewarding plant I have, *Sigmatostalix guatemalensis* — a small Oncidium type plant producing mostly four spikes of flowers per bulb. Each spike has, on the average, about 20-25 flowers which are a dark glistening brown with deep golden bars and usually last about a month. A fortnight after this set of flowers die, another set appears and repeats the cycle, the plant producing at least five sets of blooms covering a period of seven months in the one year. This, surely must be a fair record.

All these orchids I have mentioned have one thing in common — they don't like to be disturbed — pot them only when absolutely necessary. Don't try to propagate them faster than they can grow, in order to give "bits" to your friends. Ask them to wait till the right time. Don't feed them too heavily, it only rots the mix too quick — just enough feed to keep them happy.

All the plants discussed in this article are in my own humble collection, I have no hesitation in recommending them to other growers that may share my love for the "little" ones.

Nearly all these plants are "warm" growers and mine are in a glass house that is automatically heated to a minimum heat of 65°, automatically controlled fans that cut in as soon as the temperature rises above 70° while the humidity has the same treatment and is kept at a minimum of about 60%.

They are watered, as considered necessary, based on the prevailing weather conditions, and fed at four to five week intervals while the necessary insecticides and fungicides are squirted on every three weeks to one month.

The whole house is shaded by 72% sarlon cloth, except a six foot length at one end which has 82% sarlon, for those that like a bit more shade, this is so constructed that it is readily removed as soon as the sun looses its "sting" and then its clear glass for the winter.

This, surely, is little enough price to pay for the vast amount of pleasure I receive from my "little" ones.

69 *Edinburgh St., Clayton, Vic.* 3168.

SOUTH AFRICAN ORCHID COUNCIL

ORCHID SAFARI 1973

You'll have a golden opportunity to see species of African Orchids, in great profusion, at the Second South African Orchid Conference and Show, to be held in Durban, South Africa's PREMIER Holiday Resort, from 29th Sept. to 4th Oct., 1973.

Conference headquarters will be the glamorous Blue Waters Hotel. Exhibitors from all over Southern Africa and Overseas will be displaying their flowers and plants in the Durban City Hall.

The Show will be opened by Mrs. Rebecca Northen, authoress of world repute on orchid growing.

The Committee is now ready to receive registrants for the Conference, and tentative bookings for display space. Those wishing to display individually, as well as any person interested in lecturing at the Conference, are urgently requested to contact the Secretary. Registration forms will be sent upon receipt of your enquiries and application.

The registration fee will be R10.00 and this will include: Conference, morning/afternoon tea during the Conference, Official Cocktail Party, Banquet, visits to our Commercial growers and a personal invitation for an informal dinner to the homes of N.O.S. Members.

Tours of Ecological, Scenic, Wildlife and Tribal interest will be arranged.

Enquiries are invited and should be sent to The Secretary, Natal Orchid Society, P.O. Box 3404, *Durban, Natal, South Africa.*

Exotic Miniatures in South Australia

COLIN JENNINGS

Interest in growing the species and botanicals has risen in this state over the past several years, such that we see quite a selection on the display benches at our monthly meetings and also at our various shows. While most of these species shown are of the larger, more showy types there are always some which are truly miniatures. Unfortunately these miniatures are passed over by the growers who only have an eye for the large and the spectacular, but if they cared to look at these small gems for a short while they would see an even more beautiful facet of the intriguing hobby.

The Epidendrums have quite a lot to offer the grower of miniatures, with *Epidendrum porpax* perhaps the easiest to grow. This plant has a spreading habit, growing in a prostrate manner, soon covering the top of the container; its flowers forming singly at the apex of each new growth. The flowers are an interesting combination of brown and yellowish green, and last for about a week. *Epidendrum oncidioides* while not normally ranked with the miniatures is another which we grow here, the form which I have seems to grow in a miniature manner and the flowers are considerably smaller than the type. The delicate greenish yellow *Epidendrum gracile* flowers regularly around October and grows well in the warm house. A recent arrival in this state is *Epidendrum boothii,* a species with relatively short bulbs on a creeping rhizome. While having only a few flowers out at a time it has considerable charm in its 2-3 cm flowers which are generally white with a yellow medial line on the lip, it is also a fragrant flower, lasting about a week.

Two of the species Sophronitis are to be found in collections, these are *Sophronitis coccinea* and *Sophronitis cernua.* The former of the two is well known to most growers, mainly as the parent of many of our bright red intergeneric Sophrolaeliocattleyas, Potinaras, etc., however few have been successful in growing this plant for any length of time and flowering it regularly, which is most unfortunate; it is a truly spectacular flower. We in this state are unfortunately no more successful than others who try. The latter of the two does however seem to grow better and to flower more regularly. It is not a common plant in collections nor does it have the fame of its near relation, although it would seem to be a worthwhile parent if orange colours are wanted.

Two quite well known *Leptotes* are grown generally by growers here, they are *Leptotes bicolor* and *Leptotes unicolor.* Quite a number of our novice growers have made the effort to grow the first of these two, having them in flower for our November meeting. They will grow into specimen sized plants in 10cm pots and they require little attention save what you normally give the Cattleyas, etc. Another plant flowering in the November period is the ever appealing *Pleurothallus longissima* (syn. *Ghiesbreghtiana*), with its usually erect inflorescence loosely flowered with bright yellow miniature gems over most of its 30cm length.

The colourful *Ascocentrums* have been added to collections in the past five years and have rewarded those who have made the effort with a truly striking result. Many have taken to growing the hybrid Ascocendas, rather than the species, although several of us have the species growing in intermediate growing conditions and the plants are thriving. Two forms of *Ascocentrum miniatum* are growing side by side, these are from Thailand; a thick fleshy leaved form, and from Indonesia; a thinner leaved and more free flowering form. The larger growing *Ascocentrum ampullaceum* also appears here in two forms, the more common deep rose, and the rarer orange. The related Genus Ascoglossum is represented here by the small growing Philippines species *Ascoglossum calopterum,* a brightly coloured rose magenta flower about 3cm wide which is really beautiful. We have the New Guinea form of this growing, but the plant could hardly be called miniature growing by comparison with its northern neighbour, although the flower is almost identical.

Bulbophyllums are usually passed over by many growers, but to me they possess a charm and beauty all of their own, each one being quite distinct from the other and each section of the genus having quite diverse structure. They are a study in variety and an absorbing one at that. The members of the *Cirrhopetalum* section; those having their flowers in umbels at the end of an elongated stem are the most intriguing. In this group we have and flowered *Bulbophyllum amesianum,* the foetid smelling deep purple flower from the

Philippines, usually sometime in the summer. *Bulbophyllum gracillimum,* a tiny crimson flower with trailing sepals approximately 7cm long was collected in New Guinea in the Milne Bay District, and flowers in December. The pale yellow *Bulbophyllum longiflorum* from Madagascar, while only recently acquired seems to enjoy the intermediate conditions offered it. *Bulbophyllum ornatissimum* is slightly larger than the others mentioned, but its fragrant yellow with red streaked flowers are distinctively attractive. *Bulbophyllum guttulatum* (syn. *umbellatum*) from Nepal flowers regularly in May, producing an inflorescence about 15cm high with up to 8 yellow flowers spotted with red purple. Like its relatives it is also rather foetid, a characteristic ensuring fertilisation by the flies.

Three of the equitant Oncidiums are currently being grown; these include *Oncidium pulchellum, Oncidium pusillum* and closely formed *Oncidium triquetrum.* These are *truly* miniature growing plants, specimen plants fitting into a 10cm pot easily. Overall the plants stand only an inch or so high, and take up no room at all amongst your other plants.

While most of the Laelias are of the larger growing form there are some which can be considered as miniature or dwarf growers. We have several of these growing in collections in Adelaide. *Laelia lundii* has a creeping habit, developing rapidly into a large mass of bulbs each about 5cm high. The pale lilac flowers are small and relatively long lived; usually flowering in winter. *Laelia crispalabia* is also a dwarf growing species similar in form to *Laelia flava,* its pink with yellow lipped flowers are about 7cm across. The highly coloured *Laelia milleri,* parent of a number of interestingly coloured hybrids, has been grown by two people here for about two years. The scarlet red flower is most striking.

It is interesting to note that when visitors walk into a glasshouse collection the first thing they comment about is the large or colourful flower, which stands out above all else, however, they seem to spend the majority of their time intrigued by the miniatures usually tucked away amongst the pots of the larger plants. I am certain they warrant the closer attention of growers, for to me they are the real gems of the Orchidaceae.

NAME OF THE GAME

"To grow an orchid is fun, but to have it bloom and be admired by others is pure delight." Hugo Freed in *Orchids and Serendipity.*

The Royal Horticultural Society

10-YEAR ADDENDUM (1961-1970) TO SANDER'S LIST OF ORCHID HYBRIDS

The Royal Horticultural Society, as International Registration Authority, has just published in one volume an Addendum to Sander's List of Orchid Hybrids which covers all the hybrids registered during the years 1961 to 1970 inclusive.

It consists of 632 pages of hybrids, with their parents, registrants, originators, and years of registration, all alphabetically arranged on the established One-Table system; it also includes 64 pages of "preliminaries" which cover:—

A Preface by Mr. Gordon Dillon;

An Introduction by Mrs. Marjorie Wreford, who was Registrar until February, 1972;

An alphabetical List of Genera occurring in the volume, including hybrid genera and their parentage, with recommended generic abbreviations;

An alphabetical List of Generic Parents (giving all the combinations of natural genera and the name of the hybrid genus representing each combination) of all hybrid genera occurring in the volume;

A list of all the names and addresses of Registrants and Originators occurring in the volume;

A list of Corrigenda to earlier volumes of Sander's List of Orchid Hybrids.

The new volume covers and includes the information and hybrids published in the two interim Addenda for 1961-63 and 1964-66 inclusive, and integrates them with the corresponding data for the following four years, 1967-70 inclusive. When it is added to Sander's List of Orchid Hybrids (Main work 1854-1945) and Sander's One Table List of Orchid Hybrids (1946-60) Vols. 1 and 2, a complete record of all registered orchid hybrids from 1854 to 1970 is available.

This new Addendum may well be regarded as indispensable to all those who are interested in registering orchid hybrids (grexes) in as much as it provides information which will save them the time, inconvenience and postage of submitting new applications which prove to be abortive — and which will save similar time and costs in the registration office and so help to keep down the cost of registrations. This saving is additional to the great convenience to all of having such a vast source of information quickly available to check on names and parentages of plants without the time-losses and costs (at both ends) of seeking such information from the Registrar.

The new volume is handsomely bound in a hard blue cover to match earlier volumes of the List, with gold lettering on front and spine, and is priced at £8.50 Sterling plus postage and packing (£0.55 overseas).

Orders should be addressed to the Publications Dept., The Royal Horticultural Society, Vincent Square, London, SW1P 2PE, England, and cheques, etc., should be payable to The Royal Horticultural Society.

O.S. OF N.S.W. AT ROYAL EASTER SHOW

The State Society combined with metropolitan Affiliates to stage an outstanding exhibit at the Sydney Royal Easter Show. In spite of a general shortage of flowers at Easter support from growers was overwhelming, and the Show Committee did a fine job of organising.

CYMBIDIUMS

PAUL GRIPP

Mr. Gripp is a noted American grower and orchid writer.

Cymbidiums are among the most lovely and most satisfactory of all flowering plants. Their versatile and attractive colours, their long-lasting qualities, and their appealing style combine to make them outstanding cool house and out-of-door growing members of the Orchid Family. Although they are among the most easily cultivated of plants those of us who work with Cymbidiums do realize the fact that beginners occasionally have trouble in getting the utmost flower production from their plants. It is hoped that the following points will pinpoint the source of the non-blooming trouble, and start those whose luck has not been too good on the road to Cymbidium success. There are several points that are prominent as limiting factors in growing and flowering Cymbidiums and, thank goodness, in most instances these are easily corrected. Generally speaking, a simple awareness of basic needs and a pinpointing of the one or two lacking requirements is all it takes to convert a cymbidium owner to a successful cymbidium grower. Briefly, the main reasons why cymbidium plants don't are — (1) not enough light; (2) poor water or watering; (3) plants run down because of neglect and lack of general care; and (4) difficult to bloom varieties.

LIGHT — One of the most common factors that limits cymbidium success is insufficient light, although light conditions will vary in different areas, a good general rule of thumb is to give cymbidium plants as much light as they will take during the growing season without burning the leaves. Readings of 4000 to 6000 foot-candles are often suggested as about right. In warmer areas this will mean a little more shade than in cool coastal areas, to compensate for higher temperatures. Usually, though, full sun all day long is just a little too much light, whereas lath spaced one to one is often a bit too shady.

A shade cloth with a percentage of 30% to 70% depending on the heat of the area, seems about right. A good way to tell is to look at the foliage. A healthy plant will have nice strong leaves, and foliage looks best if it has a golden green look, very dark leaves which are narrow and easily broken usually indicate a lack of enough light. Particularly in residential areas, an orchid house may become shaded for a good part of the day by the shadows from trees or buildings, and this light interference can be a cause of failure to bloom. Learn to look for these light conditions. If your plants are not receiving a high amount of light all day long, one or more of these factors might be holding the plants back.

Water Practices: The more we work with Cymbidiums the more we realise the abundance of water they like, and in most areas we can safely say that it is impossible to overwater a healthy, properly potted cymbidium plant. One of my favourite indicators is to look for healthy green on the sides of the clay pots and sometimes on the surface of the soil. I am sure it could be said that if you do not have moss, you are certainly not overwatering. Abundant watering means a good watering every two or three days in sunny summer weather and every five or six days in cooler weather. The old fashioned ideas of "drying out" and "dormant periods" have been completely discarded. When watering, heavy watering is essential — two or three times with the hose or one or two inches of sprinkler irrigation each time watering is needed. Whenever possible, sprinkler irrigation is preferred and I heartily recommend a permanent overhead sprinkler system, wherever it is possible in both large and small situations. Heavy watering is essential to salt and fertilizer build-ups to which cymbidiums are particularly sensitive, salt build-ups are often indicated by white alkaline deposits on pots and soil surface, together with excessive leaf-tip burn.

Cymbidium feeding —Food and feeding are certainly among the most important factors in growing good plants of all kinds. Although feeding is essential, in this day of the garden gadgeteer, if you are doing much feeding at all, food most likely is not a limiting factor to your success in getting spikes on your cymbidiums. Any good balanced plant food is quite good for cymbidiums. A common practice among growers is to give plants a bit more nitrogen in the springtime and then about July or August (February or March in Australia)

reduce to a more balanced ratio or even to fertilizers that are very low in nitrogen and higher proportionately in potassium and phosphorus.

Why not review your feeding program? If you have been lax about giving your plants proper regular feedings, get started on a good basic program now. Start giving your plants a good general liquid feeding every third or fourth watering, or maybe a handful of blood meal (12" pot) every six weeks during the non-blooming season. This should then be what they need. Always keep in mind to leach heavy in between feedings to make sure they are not getting an accumulation of food and salts.

Condition of plant — even though our cultural conditions such as light, watering and feeding may be in line, it is important for us to be able to recognise a plant in need of attention and certainly the best of growers cannot do much with a plant unless it is in a healthy properly potted condition. The soil mix might be broken down, the plant may be overgrowing the pot. It may have become run down due to other factors. Learn to recognise condition your plants are in. If your plant has been in the same pot for three or four years and is not performing well, more than likely one of the reasons is that it needs potting attention. If it sunk far below the rim of the pot, and you can push your fingers into the old compost, no doubt the soil mix is badly broken down and the plant needs a new mixture. Give the plant a thorough processing, shake off all the old mixture and divide the plant so that you have no more than two or three bulbs to each division. You'll soon find that before long you, too, will be getting your full share of fun from Cymbidiums.

1230 *Orchid Drive, Santa Barbara, California,* 93105, *U.S.A.*

UNPOTTING THAT TOUGH CYMBIDIUM

— N. Edwards in *Blue Mountains O.S. Bulletin*

It frequently happens when one is repotting cymbidiums that one comes upon a potted plant that refuses to come out of the pot in spite of any amount of tapping of the inverted pot upon the bench. The easiest way out of the situation is to let the plant dry out for a few days. I have gone so far as to lay the pot in the sun, side up, with a bag thrown over the foliage to protect it against burning. After that it is easy to coax out the plant.

WHEN TO REPOT CYMBIDIUMS

— *Blue Mountains & District O.S. Bulletin*

There used to be quite heated discussions on the relative merits of repotting Cymbidiums in Spring or Autumn but I fancy most growers have gone along with those who advocate spring repotting. This year however, I did my division and repotting in March and though the whole story of the success of this venture may not be revealed for a long time — we don't know what spiking will be like in 12 to 15 months, for example — I am very pleased with results. In very few instances were plants seriously set back by the repotting and I think I broke off only two flower spikes. Repotting in spring requires that the plants be set in shade-sheltered positions for a couple of weeks but this time, they went straight back to their places under shadecloth. Perhaps the moderate weather was instrumental in the recovering of the plants. Incidentally, there appears to be no shortage of flower spikes.

TRIED THIS ON YOUR CHAMPION CYMBIDIUM?

The Illawarra District Orchid Society Newsletter Editor must also grow Pelargoniums because he lifted this item from *The Pelargonium and Geranium Society Newsletter.* Since it could involve sex and the single orchid it is bound to interest orchid growers. It appears that "Mrs. M- H- of somewhere in Victoria is 66 and the mother of five grown-up children. But she's using the contraceptive pill — puts them in her pots of geraniums and pelargoniums. Swears the plants grow beautifully. She said: 'My pelargoniums are as big as saucers'."

SEEDLING EXHIBITORS NOTE

Exhibitors in seedling classes at coming shows are reminded that the new definition of a seedling, as adopted by all states at the last annual meeting of the A.O.C., will apply. This definition is: "The first flowering of the complete clone". Plants which have been grown on and/or divided prior to being exhibited are no longer eligible to be shown as seedlings.

NEW MEETING HALL FOR O.S. OF N.S.W.

At its April meeting the Orchid Society of N.S.W. moved to a new venue, St. James Parish Hall, corner of Liverpool Road and Highbury Street, Ashfield. The new meeting place is spacious, comfortable, and well lighted. It proved a splendid setting for the fine Autumn Show conducted at the April meeting. A group of twelve visitors from America were welcome guests at this meeting.

Except June (Winter Show) and September, when the monthly meeting clashes with the Third Australian Orchid Conference, monthly meetings will continue to be the fourth Monday in the month.

The Novice and Cymbidiums

BRUCE FLINT in Blue Mountains & District Orchid Society Bulletin

The comparative low cost, good supply and tolerance to growing conditions of Cymbidiums make them the popular choice of the novice orchid grower on which to build a collection.

During the past year, I have gathered a few plants and pass on my experience for the benefit of others with the same intention.

As mature plants occupy a relatively large bench area, and the normal restrictions on a novice, such as limited suitable growing area, cover for winter conditions and the initial financial outlay have all to be considered, plants should be carefully and deliberately selected to gain the benefit of a long flowering season with the minimum number of plants.

The variety of flower form and colour available to suit the personal taste, that bloom from May to November can assure satisfaction from a limited number of plants if care is taken in their selection.

The surest way to obtain stock to your satisfaction is to buy plants in flower or to arrange for a division of the plant when available. Like most sure things, this method can be expensive but far more positive than selection by description or reputation, minimising disappointments that are common enough due to your cultural failures.

Before embarking on a buying spree, seek advice and guidance on the recognition of virus. This disease is most readily detected in lush, new growth and not always apparent in mature plants that have been subjected to harder growing conditions.

Seedlings are cheaper and usually disease-free but are a gamble in terms of quality as the chances are thousands to one against obtaining an outstanding plant from a single purchase. Consideration could be given to the possible shape, colour and flowering period from such and such a parentage and as many as possible of the selected cross obtained to enhance your chance of success.

Three or four years of care and attention to flower something with little potential to please or which flowers at a time when you are already flush with flowers is poor reward.

Community pots of seedlings are available from some centres and often represent good value for money. They are often well-grown and ready for potting out with little risk of loss. You may be able to share a pot with someone to lessen the outlay.

Meristems of some of the finest plants available are widely circulated and for a modest outlay (I have bought them for less than one dollar) some outstanding stock can be obtained.

Some reputed sources suggest that the meristem is stronger than the seedlings and claims have been made to flowering them in about two years.

In summary:— think twice; shop around; listed prices are only a guide and vary considerably. Thirty per cent discount to society members is available on a wide range of stock at one major centre.

Regular auctions are held at which a pleasant morning can be spent even if you don't buy anything, and the possibility of a bargain is always there.

As there does not seem to be any cure for the person bitten by the orchid bug, don't fight it; go with it and reap the pleasures.

Give yourself a chance; buy good stock — small if need be — and watch it grow. Poor stock, no matter how well-grown, will never win a prize.

ANOTHER STUNNING SLABBING SECRET FROM GRAFTON

— *Grafton Orchid World*

Dear Coelogne,

Please tell me which way up to hang my treefern slab?

Yours Orchidwardily,
Slab Happy

Dear Slab Happy,

Treefern slabs are usually cut from the mass of fine roots which surround the lower few feet of the tree fern, giving it a bulbous look towards the base. The roots of the treefern all angle outwards and downwards so the water is shed from the treefern. When used for slabs make sure the orchid is placed on the side of the slab where the roots angle inwards and downwards so that water may penetrate the slab and benefit the orchid. It is also easier for the orchid roots to penetrate. Most orchid growers have their slabs placed in such a way that the back of the slab remains fairly dry, and it is therefore important to check the root angle to gain maximum water penetration from the front.

Happy slabbing,
Coelogyne

CYMBIDIUM COMPOSTS

P. A. BYERS

Mr. Byers is President of the Orchid Society of North-Western Tasmania

To have a well grown orchid and to flower it to perfection you must have a potting medium which fulfills five basic characteristics. These characteristics being;

1. a fairly open mixture to permit air movement and water drainage.
2. the ability of the compost to last for some considerable time without breaking down.
3. it should maintain a slightly acid condition.
4. it should be able to support the plant in a natural growing position.
5. the ability of the compost to release to the plant supplementary nutrients.

We are very fortunate in Tasmania to have at our "back door" vast reserves of natural leaf mould of various kinds and also sources of obtaining Pinus Radiata bark or chips, which has been proved to be the equivalent of the imported American Tan Bark.

These natural substances alleviate the problem of having to purchase tanbark, rice hulls, peat moss, plastic foam granuals or any other part of the final compost, that many mainland growers have to put in their composts. Growers on the North West Coast of Tasmania have used these natural reserves of potting material to their advantage.

There are of course many different kinds of orchids and each particular species requires a slightly different potting medium. Because most growers, whether new or old, and intending growers have cymbidiums as the bulk of their collection, I will endeavour to deal with the different "recipes" of cymbidium composts of some of the North West Coast growers.

Three growers along the coast have provided their favourite "recipes" for cymbidium compost and I will now give details and describe these potting mediums.

Mr. Henry Miller has chosen a mixture which when mixed will provide a total of approximately fifty cubic feet:—

Parts	*Ingredients*
10	Pinus Radiata chips up to approximately an inch in diameter and of various parts.
10	Pure Myrtle leaf mould (after the leaves have decayed to loam).
7	Myrtle and any other leaves which happen to be mixed with them, together with she-oak needles and small cones which are generally mixed up with the fallen needles.
2	Crushed blue metal up to $\frac{3}{16}$".
	Substantial quantities of charcoal.
	Fowl manure. If this is dry and from pens in which straw has been used about one seventh of the total quantity of the other ingredients is used. If it is processed, half this quantity is used as it is more concentrated. Mr. Miller believes the manure from the pens is preferable because the straw provides extra "roughage".
	Liberal sprinkling of Dolomite.

The mixture is then turned each week until the heat has subsided. This normally takes from nine to twelve weeks, dependant on weather conditions and the mixture is kept moist during the whole time.

Mr. Barry Dudman favours a mixture compiled in the following manner —

Parts	*Ingredients*
5	Radiata Pine Bark chips.
3	Myrtle leaf mould.
1	She-oak leaf mould or Eucalyptus mould.
$\frac{1}{2}$	Charcoal.
$1\frac{1}{4}$	Sea-weed (leaf), this is washed free of salts before it is used.
$\frac{1}{4}$	Fowl manure.
$\frac{1}{4}$	Blood and Bone.
$\frac{1}{4}$	Dolomite lime.

Each of the above parts consists of one (1) 2 gallon bucket. This mixture is generally mixed in autumn and left to stand over winter, turned several times during this period until the heat has dissipated and it is ready to use. The main reason for the use of sea-weed leaf in the above compost is Barry's close proximity to the beach, just a step as one might say, and it is used as an additional ingredient to keep the mixture open.

I myself use a mixture which consists of the following and is also mixed using a two gallon bucket as one part.

Parts	*Ingredients*
10	Myrtle leaf mould.
5	Pinus Radiata chips.
5	She-oak leaf needles.
1 to $1\frac{1}{2}$	Charcoal.

1 Fowl manure from the pens where straw has been used.
1 lb. Dolomite lime.
1 lb. Blood and bone.

This mixture is kept moist and turned until the heat has subsided at which time it is ready to use.

You will have noticed that in all of these composts there was a base mixture consisting of Pinus Radiata chips, Myrtle leaf mould and She-oak leaf mould.

You might probably ask, "Well, why add She-oak leaf mould to the Myrtle leaf mould that you have already got". The reason for this is that the Myrtle leaf mould is a very fine mould and when used just by itself together with the Pinus Radiata chips this fine mould would tend to clog up and so the coarser She-oak mould is added.

By the same reasoning you may say, "Well, why not use more pine chips". If this was done then the food value which is released to the plant by the mould is cut back considerably by the addage of pine chips and also the plant would be very insecure in the pot.

From this reasoning you can see that a natural balance must be obtained consisting of adequate drainage, food value and plant support from the basic mix.

Why add charcoal? Charcoal when added to the potting medium will "sweeten" the mixture. Charcoal has the property of absorbing impurities from substances that surround it and in the potting mixture this includes the compost, and the air that circulates in it.

We now come to the subject of lime which is generally added in the form of dolomite. Lime is essential to the orchid plant as the magnesium it contains is a basic part of chlorophyl (the ability of the plant to utilise sunlight in the photosynthetic process). For more immediate effect magnesium sulphate or epsom salts can be added.

The addition of fowl manure and blood and bone to the compost is to help provide the plant with supplementary nutrients during the "life" of the potting medium.

There are various other ingredients that can be added to orchid composts but to explain further would only tend to clutter the basic compost ingredients that have already been given. And besides, if one can grow well flowered orchid plants in the above mixtures then there is really no need to go further.

I hope that you will all spend many happy hours hunting around in the bush for your orchid compost.

Orchid roots

RUSSELL MARTIN

We have for years looked upon the orchid root as part of the plant which searches among the potting mixture for suitable food to absorb in liquid form and send up to the leaves for transformation into plant material. If a root was broken we cut it off at the break when repotting in the mistaken belief that it was of no further use to the bulb.

The microscope has now revealed that this is wrong, along with many other beliefs. The root is made up of a central core, consisting of a number of tough tubes wound together, which pass food in a liquid form from the root tip to the leaf cells and back again. The soft tissues surrounding this central core are rings of cells used to store food and water.

The ten layers of cells on the outside surface of the root serve a double purpose. It is in these cells that the mycorrhizal fungus lives and penetrates the cell walls, using some of the orchid food to sustain itself.

The fungal threads pass through these ten outside layers of cells quite freely, unhindered in any way, but at the eleven circular layer of cells the fungal threads are devoured and utilised by the plant as food.

With a balanced feeding and watering programme we can grow better roots, better fungus, and in turn, better plants.

When a root is broken the fracture occurs around the outside layers of cells and does not fracture the central core through which the orchid food flows in both directions. If the central core is still intact it is not necessary to remove this root when repotting.

IS SOMETHING BIG BREWING AT McBEANS?

Mr. Russ Martin, President of the Victorian Orchid Club and Managing Director of McBeans Australia Pty. Ltd., has recently returned from a six week stint in England. McBeans, the English parent company, last year absorbed Charlesworths who have long been famous for breeding within the *Odontoglossum* complex. Has Russ brought back news of the coming easy availability of Charleworth orchids? Maybe we will have the answer in the next big issue.

Dendrobium johnsoniae

Last issue an illustration was published which purported to be *D. johnsoniae,* but in fact was *Laelia anceps.* Profound apologies for the error. There will be a special article on the *L. anceps* concerned in a future issue.

A sparkling gem from W.A.

HERB FOOTE

Right:
Rhynchostylis retusa x *Sarcochilus hartmanii* — I wish it had a short name!

I received this as a small plant, being a gift from Bill Murdoch.

It grows in an 8 inch "short" clay pot in pine bark and buzzer chip (jarrah) mixture, and flowered for the first time in Sept.-Oct., '72, and again in March-April, '73. It prefers to be kept warm in winter.

It is small but sparkling and eye catching. It gained 1st prize in Class "Any other hybrid" at the W.A. Spring Show, '72.

Editors note. Several of this fascinating cross have flowered in the eastern States, most of them with attractive spotting. It's one of those crosses that, when they see it, everybody wants.

Photo: Herb Foote





Amazing florescence

Left:
Oncidium flexuosum CCC/QOS, owned by Mr. B. G. Faux, 51 Waratah Avenue, Graceville, Brisbane, Qld., who was awarded a Certificate of Cultural Commendation for this plant. It carried 30 spikes of blooms, with a total of 5,600 clear yellow, nicely shaped blooms, and the whole plant in very clean condition. Grown from a division obtained four years before the Award.

It was originally on brown tree fern fibre, but for the past three years has been on the black tree fern fibre.

Growing conditions: In a shadecloth house with 52% shade. The plant hangs about 18 inches from the top, facing north. Fertilized once per month, with soluble fertilizer, alternate makes. Watered once a day in summer, and about once per week in winter.

Photo: B. G. Faux

A PEEP AT WIDER WORLDS

COMPILED BY LAURIE DEANE AND RONALD KERR

THOUGHTS ON JUDGING

The British Orchid Council has cottened on to the Judging Class idea but fast. *The Orchid Review* for December, 1972 — p. 235 — reports the first week-end class conducted by the Council. The article is interesting for those wishing to compare the English approach to judging instruction with the Australian. However it's main interest to us lies in the fact that Australia was represened by N.S.W. Judge Mr. Stan Condon. Stan posed in a group photo (reproduced in colour) which contained much of the English orchid hierarchy.

HAVE A FLUTTER

You could do a lot worse than put your money on a Moth Orchid. For a fascinating introduction to their background see the article *An Account of Moth Orchids: The Beginning Years* by Lewis and Varina Vaughn in the January *American Orchid Society Bulletin,* page 4. Illustrated in colour.

NOVELTY PHALLIES ARE ACUMIN IN

There's a real upsurge in novelty phalaenopsis breeding in the old U.S.A. Yes sir! And the movements most venerable prophet is Mr. Hugo Freed of Malibu fame and author of that fine book *Orchids and Serendipity.* You'll be well rewarded if you hunt up a copy of the Jan.-Feb. issue of the *Orchid Digest* and turn to pages 4 to 10. Not only is Mr. Freed's article on *Breeding Novelty Phalaenopsis* of absorbing interest but the twelve colour illustrations are just utterly fantastic. Get with it.

FOR BEGINNINGS WITH CYMBIDIUMS

Mr. Ray Bilton of McBeans (and few are as knowledgeable on the subject) has a deal to say on cymbidium culture each month in *The Orchid Review.* Of course a little transposition of dates is necessary when reading but southern hemisphere folk will find a deal of meat to chew over.

EUANTHE SANDERANA

Or do you know this better as *Vanda sanderiana?* The less familiar name is the result of its cleaving off from the genus *Vanda* by the botanist Schlechter a generation ago. *Euanthe* is a monotypic genus — that is it contains only one species. It differs from the true *Vanda* in having a markedly different lip structure and a flatter flower. The January, 1973 issue of *The Orchid Review* has fine colour reproductions of two of its varieties (p. 23) and an article by Mr. Oscar Kirsch of Honolulu on its influence in hybridising. Mr. Kirsch concludes: "Experience taught us that we must maintain a percentage of well-shaped *Vanda sanderiana* blood to give us worthwhile hybrids". Incidentally the dropping of the letter "i" in *Euanthe sanderana* is not a typographical error but is in comformity with Latin grammar. Hybrids between *Euanthe* and Vanda are correctly *Vandanthe.*

GETTING LIT UP

A beginner's experience with fluorescent light growing in an old coke shed is described in the February, 1973 *Orchid Review.* In Australia only a few experts have tried growing this way, and then mainly for seedlings. Have any Australians anything to report?

ADAPTING THE ECOLOGY

Mr. Geoff Hands in *The Orchid Review,* Feb., 1973 has this to say: "One of the fine points of the art of growing orchids is the ability to tell very quickly whether a plant likes its situation". Mr. Hands then proceeds to illustrate in photo and text his experimental approach to culture. Thought provoking. Page 60. Title: *Growing well.*

EIGHTH WORLD ORCHID CONFERENCE

It's less than two years away. Start saving those pennies to-day. The next Conference is due to be held in the garden city of Frankfurt, Germany, in mid-April, 1975, and many Australians have already signified their intention of going.

The Australian party to the Columbian W.O.C. was led by the then President of the Australian Orchid Council, Mr. W. R. Smoothey, and proved an unforgettable experience.

It is hoped that the current A.O.C. President, Mr. Jim Mackinney, will lead the 1975 party.

The final itinerary has yet to be decided. One suggestion is a tour which would take advantage of the current air fare concessions. This would mean a stay of 45 days away from the point of departure. This may be too long for some, so there is a possibility of a second tour of from 21 to 28 days.

Intending registrants and enquirers should contact the Tour Organiser, Mr. W. R. Smoothey, 15 Merlin St., Roseville, N.S.W. 2069.

NAMES FOR AUSTRALIAN CROSSES

Limberlost Nurseries of Cairns have registered the cross of *Cattleya loddigesii* x *Blc.* Dark Waters as *Blc.* Herb Jones.

Two interesting crosses have been registered by Mr. Kevin McFarlane, also of Cairns. They are *Dendrobium* June Bennett, which is a cross of *D.* New Guinea with *D. williamsianium,* and *Phalaenopsis* Karen Ann McFarlane from the mating of *P.* Robyn Stone and *P.* Mad Hatter.

UNUSUAL CROSS GETS ATTENTION IN W.A.

At an early Autumn meeting of the O.S. of W.A. Mr. H. W. Hill's *Brassolaelia* cross attracted attention. This unusual bi-generic, *Bl.* Richard Mueller had a spray of open smallish orange flowers with a yellow red veined lip. The clone is one of the progeny of *Laelia milleri* (red) crossed with *Brassavola nodosa* (cream). Another plant of great interest at the same meeting (it won the popular vote) was a selfing from *Blc.* Norman Bay 'Lows' FCC/RHS. The parent is a very famous clone and undoubtedly one of the best of the crossing *Bc.* Hartland with *Lc.* Ishtar. It was in a 6" terra-cotta squat pot with redwood bark as the growing medium.

New releases from overseas Hybridists

MINIATURE CYMBIDIUMS — 3″ pots

Cym. King Arthur 'Round Table' B/5th WOC x Showgirl 'Glamour Jane' AM-AOS — tall spikes white to green mid-season $3.00
Cym. Camelot 'Tartar' x Vieux Rose 'Dell Park' FCC-RHS — prolific blooming pinks mid-season $2.00
Cym. Mimi 'Mary Bea' BM-CSA, HCC-AOS x Carisona 'Glendassary' — super mahoganys to rich reds mid-season $2.00
Cym. Sweetheart 'Lillian Reed' x Ann Green 'Graduation Day' AM-AOS — pink polymins mid-season $2.00
Cym. Jean Brummitt x Carisona 'Glendessary' — very dark 2nd generation $2.00
Cym. hoosai 'Album' x Dag 'Dandy' — fragrant clear green with alba lip $2.00

Limited seedlings available of MIM. CYMS. adv. March issue A.O.R.

PAPHIOPEDILUMS

Species

Paph. curtisii	flowering size	$20.00
Paph. curtisii v Sanderae	flowering size	$25.00
Paph. niveum ANN THONG	flowering size	$14.00
Paph. sukhaukulii	flowering size	$12.00

Exhibition types and outstanding novelty types — 2″ pots

Paph. John Thatcher x Canberra — large shapely spotted $3.50
Paph. (Langley Pride x Littledean) x Gwenpur 'symmetry' — large greens some with spots $3.50
Paph. Matcheck No. 1 x Paeony 'Regency' — brilliant reds $3.50
Paph. Matcheck 'Mars' x Paeony 'Regency' — reds $3.50
Paph. Agnes de Burc x Golden Acres 'Stately' — golden colours $3.50
Paph. Chapmanii (curtisii 'Exquisitum' x bellatulum 'Red Wing') — could be brighter than Paph. Vanda M. Pearson $4.50
Paph. Bonita 'Jacqueline Smith' HCC-AOS x Sandra Mary 'Terry' HCC/ODC — large shapely mahoganys $3.00
Paph. Bellringer 'Chimes' AM-AOS x Mildred Hunter 'Ileana' HCC/AOS — spotted mahoganys $3.00

CATTLEYAS — 2″ pots

Blc. Greenheart 'Imperial Jade' x Lc. Edgar Van Belle 'Royal Velvet' — green to yellow $2.00
Lc. Holiday Gem x Peggy Huffman 'Carrousel' HCC-AOS — green with splashed petals expected $2.00
Lc Charlesworthii x Bc. Mt. Anderson 'Norm Tator' AM-AOS — fine shaped yellows $2.00
L. cinnabarina x Bc. Mt. Anderson 'Norm Tator' AM-AOS — riot of yellows to reds $2.00

Nursery hours 8.00 a.m. to 3.00 p.m. Tuesday through to Sunday. Closed Mondays.

Air Freight delivered QLD., N.S.W., VIC. 6 seedlings or 1 adult plant $1.85
S.A., TAS., W.A. 6 seedlings or 1 adult plant $2.10

Packing Free — Sorry NO lists

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Society News and Views

UNIQUE PLANT WINS ERIC BOON MEMORIAL TROPHY

Champion bloom at the Townsville Orchid Society's Members' Show, and therefore winner of the above trophy, was Mr. Ian Walter's *Galle ttia grandiflora.*

This was a beautiful plant growing in a plastic pot in peat. It had two racemes of flowers, each with greenish sepals and petals overlaid with brown. The labellums were markedly striped and had orange throats. Flowers can be up to 3½" across. The segments are star shaped. There are usually one to four flowers to a raceme.

The plant was for a time included in the genus *Zygopetalum,* but later given separate status as *Galleottia grandiflora* by the botanist Achille Richard. This proved to be a homonymic epithet, that is the generic name had been used before, and in 1963 A. D. Hawkes created the new generic name *Mendonsella* for it. See *Orquidea* 25:7 1963. There is an excellent article and picture in the *American Orchid Society Bulletin,* April 1972, p.316.

The correct name is therefore *Mendoncella grandiflora* (A. Rich.) A. D. Hawkes.

Mr. M. Watson presented Mr. Walters with a beautiful trophy and congratulated him on his cultural achievement on behalf of Townsville Orchid Society members.

IS THIS A RECORD?

Mrs. Schmutter, of 128 Blackwood Road, Salisbury 4107, Qld., would very much like to know if any gr wer can advise of having achieved themselves, or know of any orchid grower who has managed to produce more blooms on *Angraecum* Veitchii than her own plant. This flowered last year with nineteen spikes and a total of 147 flowers.

7	spikes carrying	9 blooms	63
7	spikes carrying	8 blooms	56
3	spikes carrying	6 blooms	18
2	spikes carrying	5 blooms	10
			147

The plant was bought as a seedling from Mackinney's Nursery for 15/- in 1965 and has been grown in a vanda mix of charcoal, broken up cattle bone, and some stag horn peat, the latter to mainly hold a little moisture.

It was a plant that has always grown well right from the beginning, and in 1968 it was transferred to a 15-inch terra-cotta pot (this was bought in 1938 for 3/6).

It is grown out in the open with vandas, and in a position where it gets all day sun in winter and in the summer it is shaded in the afternoon. Fertilized occasionally.

It has flowered most years, but last season's flowering has been the best. In the latter stage it was covered with fine plastic to keep the flowers and foliage clean.

The Brisbane Orchid Society — of which Mrs. Schmutter is a member, each year makes a cultural award, The Dr. John Nye 'Healthy Mind and Body Trophy', and of course Mrs. Schmutter was the deserving winner for 1972.

SUB-TROPIC ORCHID COUNCIL

A meeting and field day of the Sub-Tropic Orchid Council of Queensland has been arranged for Saturday, 21st July at Bundaberg. Mr. W. Patterson of Gympie is President of the Council and the honorary secretary is Mrs. Blake of Caloundra. Further information on this function and the activities of the Council may be obtaned from the publicity officer, Mr. A. Bennett, 35 Vasey St., Bundaberg, Q'land 4670.

PEACE SHATTERED

It is rumoured that the birds and the beasties of the Kanangra-Boyd Plateau about 100 miles west of Sydney will never be the same again since the invasion by sundry hairy types and baggy-trousered individuals from the Parramatta Orchid Society. These terrifiers of defenceless fauna respond to such hononyms as "The Looper", "The Dendrobe Beetle", and even more horrifying terms calculated to make even the hardiest orchid curl up its roots in dismay.

One fortunate feature of several such invasions by this tough group has been that their arrival is always indicative of heavy rain, no doubt because their leader is alleged to have spent an apprenticeship with the witch doctor and rainmaker of a remote tribe.

These sacrilegious invasions of the wilderness did call attention to the fact that at least eight genera and nineteen species of terrestrial orchids have been recorded in the area. Also that a goodly part of the Kanangra-Boyd National Park has been snitched by the Forestry Department for conversion to pine forest. This is likely to upset the ecology of a unique highland plateau. Due to the efforts of the Colong Conservation Committee the area around the Boyd River has been kept in the Park.

MRS. REDIX AWARDED LIFE MEMBERSHIP

Eve Redix is a legend in the N.S.W. orchid world, both as a grower and for her active support of all O.S. of N.S.W. functions and Shows. At the last Annual General Meeting she achieved the distinction of being elected, in a strongly contested election, as the first woman ever to grace the Management Committee.

Unfortunately Mrs. Redix had a period of bad health from which she is only now recovering. Her many friends were gratified to see her at the April Autumn Show meeting, along with husband Ed Redix. They were still further gratified when President Barry Collins pinned a Life Membership badge on her lapel. Congratulations Eve.

APOLOGY

The interesting Show illustration on page 41 of the March issue was wrongly attributed to the Townsville Orchid and Allied Plants Association instead of the Townsville Orchid Society. Both these Societies have contributed greatly to the development of the orchid hobby in North Queensland. Their members include some of the best growers in Australia, evidenced by the fact that one of them, Mrs. G. Ridge, won Reserve Champion orchid at the Sixth World Orchid Conference, and Mr. M. England won Champion Vanda at the Seventh W.O.C. for his *Euanthe sanderana* (syn. *Vanda sanderiana*). It is planned to publish some special articles in future issues on the collections and growers of Townsville. Apologies for this error to members of both Societies.

Rare and Beautiful Orchid Species

Species are: different; fascinating;
great conversation pieces;
unusual; beautiful:

THE ORIGINALS

From all over the world, new and rare species and old favourites are coming into stock all the time. If you want a particular species, sooner or later it will be found, just ask.

Some species on hand:

Aerides lawrenceae, quinquevulnerum, mitratum, flabellatum. Angraecum compactum, magdaleneae, longicalcar, philippinense. Aeranthes grandiflora, arachnites, henricii. Bulbophyllum dearei, siamense, lishanense and half a dozen others. Cattleya luteola, walkeriana, guttata var leopoldii. Cymbidium lancefolium, rubigemmum and other Chinese miniature species. Dendrobium topaziacum, williamsii, Jenkensii. Dendrochilum glumaceum. Epidendrum difforme, porpax, polybulbon. Laelia flava, lundii, millerii, crispilabia, rupestris, pumila praestans. Paphiopedilum glaucophyllum, sukhaukulii, argus, ciliolare. Phalaenopsis manii, cornu cervi. Ascocentrum ampullaceum 'orange'. Trichopilia coccinea. Gastrochilus species. Rodriguezia venusta. Scuticaria hadwenii, steelii. Oncidium pubes, harrisonianum. Neofinetia falcata.

SPECIES COMING include more

Paphiopedilum species, Phalaenopsis species, Vanda, Dends., Aerides, Laelias, Cryptopus elatus, Oeoniella polystachys, Gastorchis, Cattleyas, Epidendrums, Aerangis, and others.

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Show-go-round of '73

THIRD AUSTRALIAN ORCHID CONFERENCE SHOW
in conjunction with
THE SPRING ORCHID FESTIVAL OF SOUTH AUSTRALIA
As the Melbourne Cup is to racing
so is this show to orchids in 1973
Held in The Auditorium, John Martin & Co. Ltd.
Rundle Street, Adelaide
Open to the public Monday, 24th to Friday, 28th Sept.
(Dates inclusive)
SPECIAL SESSIONS FOR CONFERENCE REGISTRANTS
South Australians grow fine orchids and have a high standard of preesentation in all their shows

STATE SOCIETIES

Orchid Society of N.S.W. WINTER SHOW. Westfield Plaza, Hornsby, Monday, 25th June to Saturday, 30th, during shopping hours and one or two nights to be announced. Theme: "Winter-wonderland". Setting up Sunday, 24th June. SPRING SHOW. Burwood Westfield Plaza, Monday, 17th Sept. to Saturday, 22nd Sept. during shopping hours and one or two nights to be arranged. Theme: "Orchids in Europe". Setting up on Saturday p.m. and Sunday a.m., 15th and 16th Sept. Hon. Sec.: Mr. S. Condon, 31 Bambara Crescent, Beecroft, 2119. Phone 869 8967.

The Orchid Society of Western Australia. WINTER SHOW. Set up evening of 4th July. Location: Garden City, Booragoon, a new shopping complex. Open Thursday, 5th July to Saturday, 7th, during shopping hours. SPRING SHOW. Set up evening of 12th Sept. at the Carousel Shopping Centre. Show open Thursday, 13th to Sat., 15th. The Show is earlier than usual to avoid clashing with the Third World Conference. Hon. Sec.: Mr. J. M. Foley, 39 Stirk Rd., Alfred Cove, 6154. Phone 30 2132.

Queensland Orchid Society. SPRING SHOW. For information contact: Hon. Ass. Sec.: Mrs. J. C. Beale, Box 2002X, G.P.O., Brisbane 4001.

Tasmanian Orchid Society. SPRING SHOW. Motors Showroom, 179 Macquarie St., Hobart. Friday, 5th Oct., 1 p.m. to 10 p.m., Saturday, 6th, 10 a.m. to 10 p.m., Sunday, 7th, 10 a.m. to 6 p.m. Hon. Sec.: Mr. J. R. Longden, 54 Kellatie Rd., Rosny, 7018. Phone 44 2546.

Victorian Orchid Club. WINTER SHOW. Doncaster Shopping Town. Setting up 22nd July and through the week during shopping hours to Friday, 27th. SPRING SHOW. Camberwell Civic Centre, Sun., 7th Oct. to Thurs., 11th Oct., 10 a.m. to 10 p.m. Hon. Sec.: Mr. A. F. Wilson, 1 Arthur St., Murrumbeena 3163.

NEW SOUTH WALES
SYDNEY METROPOLITAN AREA

Bankstown Orchid Society. WINTER SHOW. Lions Club Hall, Hume Highway, Yagoona. Sat., 28th July, 10 a.m. to 10 p.m., Sun., 29th, 9 a.m. to 4 p.m. ANNUAL SPRING ORCHID EXHIBITION. In the fine new Town Hall, Chapel Road, Bankstown. Thursday, 6th Sept., noon to 9.30 p.m., Friday, 7th and Sat., 8th, 9 a.m. to 9.30 p.m., Sun., 9th, 9a.m. to 4 p.m. Hon. Sec.: Mr. M. Morgan, 804 Henry Lawson Drive, Picnic Point, 2213. Phone 77 5253.

Berowra & District Orchid Society. SPRING SHOW. District Hall, Berowra Waters Rd. (just off Pacific Highway). Friday, 7th Sept., 10 a.m. to 9 p.m., Sat., 8th, 9 a.m. to 10 p.m. Renowned for high quality exhibits and excellent decorative work. Light refreshments. Hon. Sec.: Mr. J. Armes, 2 Bayview St., Mt. Kuring-gai, 2080. Phone 47 9392.

Cumberland Orchid Circle. WINTER SHOW (Members only), Town Hall No. 2, Church St., Parramatta. 10th July at 8 p.m. Good displays of paphiopedilums and miscellaneous orchids. SPRING SHOW. Place and dates to be arranged. For details contact Honorary Secretary, Mrs. Pat Jagger, 226 Annangrove Rd., Annangrove, 2154. Phone 628 1386.

Eastern Suburbs Orchid Society. MEMBERS' WINTER SHOW. St. Luke's Church Hall, Arden and Varna Sts., Waverley. Monday, 18th June, at 8 p.m. MEMBERS' SPRING SHOW. Same place and time, Monday, 10th Sept. Both are otherwise normal meeting nights with a guest speaker while judging is in progress. Hon. Sec.: Mr. Stan Condon, 31 Bambara Crescent, Beecroft, 2119. Phone 869 8967.

Eastwood & District Orchid Circle. SPRING SHOW. The Masonic Hall, Rowe St., Eastwood. Monday, 10th Sept., 1.30 to 10 p.m., Tues., 11th 10 a.m. to 10 p.m., Wed., 12th, 10 a.m. to 9.30 p.m. Hon. Sec.: Mrs. C. Woodstock, 639 Blaxland Rd., Eastwood, 2122. Phone 85 3896, A.H. 858 1782.

Five Dock R.S.L. Orchid Society. SPRING SHOW Drummoyne Civic Centre, cnr. Lyons Rd. and Marlborough St., Drummoyne. Wed., 10th Oct., 2 to 10 p.m., Thurs., 11th and Fri., 12th, 10.30 a.m. to 10 p.m., Sat., 13th Oct., 10.30 to 7 p.m. Outstanding late flowerings at this show. Hon. Sec.: Mrs. Joyce Duncan, 102 First Ave., Five Dock. Phone 83 9072.

ORCHID COMMUNITY POTS ARE HERE AGAIN

5 plants per pot of the same name. **$1.50 per pot**

CATTLEYAS
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7199 Sophro Laelia Gustave Vinicke x C. Fred Sander.

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PHALAENOPSIS
6909 P. Grace Palm 'Capilola' H.C.C. x Juanita Fascination (white).
7497 P. Fairway Park x Doreen Kodama x Orleans Aiea x Lachesis (white).
7495 P. Red Fly x Judy Karleen x Lachesis red lip (white coloured lip).
7502 P. Lachesis x Mannii (yellow/cream).

VANDAS, ASCOCENDAS
7000 Vanda Boschii x Flammerolle x suavis.
7042 Vanda Rothschildiana x Miyamoto x Curvifolium.
7054 Vanda Rothschildiana x Diana Ogawa x Curvifolium.
7072 Asco. Meda Arnold 'Red' x Sanderiana x Meda Arnold.

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Kuring-gai Orchid Society. SPRING SHOW. Pymble Community Centre, Pacific Highway, Pymble. Friday, 17th August, 1 p.m. to 10 p.m., Sat., 18th, 10 a.m. to 9 p.m., Sun., 19th, 12.30 p.m. to 8.30 p.m. Renowned for early cymbidiums and miscellaneous orchids. Exhibitors from other clubs, individuals, and nurseries, welcome. Hon. Sec.: Mr. R. Hindwood, Gumnut Rd., West Pennant Hills, 2120. Phone 84 6243.

Lidcombe Hospital Orchid Society. NINTH ANNUAL ORCHID FESTIVAL. Main Recreation Hall, Lidcombe Hospital, Joseph St., Lidcombe. Friday, 7th Sept., noon to 9 p.m., Sat., 8th, 9 a.m. to 9.30 p.m., Sun., 9th, 10 a.m. to 5 p.m. Hon. Sec.: Mrs. B. A. Bailey, 44 Bertram St., Mortlake, 2137. Phone 73 5162.

Manly-Warringah Orchid Society. THIRD ANNUAL SHOW. Mona Vale Memorial Hall, Pittwater Road, Mona Vale. Friday, 31st August, 1 p.m. to 8 p.m., Sat., 1st Sept., 8 a.m. to 8 p.m., Sun., 2nd, 10.30 a.m. to 5 p.m. Admission 20c, under 14 years free. Lucky door prizes. Hon. Sec.: Mr. R. Barrack, 31 Wilson St., Harbord, 2096. Phone 93 2753.

North Shore Orchid Soicety. WINTER SHOW. Chatswood Town Hall (main Hall), 9th June, at 8 p.m. SPRING SHOW. Grace Bros. Sunshine Square, Chatswood. Tues., 11th Sept., noon to 5 p.m., 12th and 14th, 10 a.m. to 5 p.m., Wed., 13th, 10 a.m. to 9 p.m., Sat., 15th, 10 a.m. to noon. Hon. Sec.: Mr. S. Huntington, 72 Tambourine Bay Rd., Lane Cove, 2206. Phone 42 6445.

Panania-East Hills R.S.L. Orchid Society. SPRING SHOW. Panania Senior Citizens' Centre. Sept. 22nd, 10.30 a.m. to 8 p.m. Cnr. Tower and Anderson Ave., Panania. Hon. Sec.: Mr. G. Webster, c/o Panania R.S.L. Club, 28 Childs St., Panania. Phone 77 8812.

Parramatta & District Orchid Society. WINTER SHOW. Todd Hall, Marion St., Jubilee Park, Parramatta, on Wed., 25th July at 7.30 p.m. SPRING SHOW. No. 2 Parramatta Town Hall, Church St., Parramatta. Thurs., 6th Sept., Fri., 7th and Sat., 8th, 9 a.m. to 10 p.m., Sun., 9th, 10 a.m. to 5 p.m. Set up Wed., 9 a.m. to 9 p.m. Hon. ec.: Mrs. P. T. Phillips, 29 The Trongate, Granville 2142. Phone 637 6797.

St. George Orchid Society. WINTER SHOW. Methodist Church Hall, Bay St., Rockdale, Tuesday, 3rd July, 8 to 10 p.m. SPRING EXHIBITION. Legacy Hall, Ormonde Parade, Hurstville. Thurs., 30th August, 12.30 to 9 p.m., Fri., 31st and Sat., 1st Sept., 10 a.m. to 9 p.m., Sun., 2nd, 11.30 a.m. to 5 p.m. Open section for all members of Societies affiliated with O.S. of N.S.W. Proceeds of Show to Legacy. Hon. Sec.: Mrs. Jean Slattery, 12 Eddystone Rd., Bexley. Phone 50 7985.

Sutherland Shire Orchid Society. WINTER SHOW. Gymea Community Centre, 39 Gymea Bay Rd., Gymea, 9th July, 8 to 10 p.m. SPRING SHOW. Gymea Community Centre, Friday, 7th Sept., 11 a.m. to 9 p.m., Sat., 8th, 9 a.m. to 9 p.m., Sun., 9th, 1 p.m. to 4.30 p.m. Worth visiting. Hon. Sec.: Mr. Ron Chalmers, 25 Turriell Point Rd., Caringbah. Phone 525 7215.

Western Suburbs Orchid Society. MEMBER'S WINTER SHOW. Presbyterian Hall, cnr. Concord Rd. and Correy's Ave., Nth. Strathfield. Tuesday, 10th July at 8 p.m. MEMBERS' SPRING SHOW. Location as above, Tuesday, 11th Sept. Visitors' plants welcome at both Shows: special table. Hon. Sec.: Mr. E. J. Lilliss, 12 Knocklayde St., Ashfield 2131. Phone: 797 9995.

NEW SOUTH WALES — RURAL

Byron District Orchid Society. SPRING EXHIBITION. Church of England Hall, Mullumbimby, 7th and 8th Sept. Hon. Sec.: Mrs. H. I. Hobbs, Bruxner Highway, Wollongbar, via Lismore 2480.

Campbelltown & District Orchid Society. ANNUAL SPRING ORCHID SHOW. Ingleburn Community Hall, Oxford Rd,. Ingleburn. Sat., 29th Sept., 11 a.m. to 6 p.m. An all-round high quality show with natives a special feature. Hon. Sec.: Mr. K. Bursill, 11 Condamine St., Campbelltown, 2560. Phone 046 22534.

City of Lismore Orchid Society. SPRING EXHIBITION. Lismore City Hall Cedar Room, 10th, 11th, 12th and 13th Sept. Hon. Sec.: Mrs. H. I. Hobbs, Bruxner Highway, Wollongbar, via Lismore 2480.

Gloucester District Orchid Society. SPRING SHOW. RSL Hall, Dennison St., Gloucester. Thursday, 20th Sept., noon to 9 p.m., Friday, 21st, 10 a.m. to 9 p.m. Hon. Sec.: Mrs. M. J. Thompson, 42 Queen St., Gloucester. Phone 330.

Gosford & District Orchid Society. WINTER SHOW. CWA Rooms, Donnison St., Gosford on Thurs., 26th at 8 p.m. SPRING SHOW. Imperial Shopping Centre, Gosford. Monday to Saturday inclusive in shopping hours. Hon. Sec.: Miss Edna McKeon, P.O. Box 541, Gosford. Phone 41 4753 (STD 043).

Hastings River Orchid Society. SEVENTH ANNUAL MID-COAST CHAMPIONSHIP. Friday, 5th Oct., noon to 9 p.m., Sat., 6th, 9 a.m. to 9 p.m. $200 prize money. Admission free. Hon. Sec.: Mr. H. Klose, 8 Campbell St., Wauchope, 2446. Phone Wauchope 134.

Maitland & Coalfields District Orchid Society. ANNUAL SHOW. Location: Green Hills (Woolworths) East Maitland. Thursday, 27th Sept., 10 a.m. to 9 p.m., Friday, 9 a.m. to 5 p.m., Saturday, 29th, 9 a.m. to noon. Hon. Sec.: Mr. Bruce Mears, 39 Main Rd., Gillieston Heights, 2320. Phone 32 8100.

Manning River Orchid Society. WINTER DISPLAY. C.W.A. Rooms, Taree. Friday evening, 6th July. ANNUAL SPRING SHOW. Presbyterian Hall, Albert St., Taree. Thursday, 13th, noon to 9 p.m., Friday, 14th, 9 a.m. to 9 p.m. Hon. Sec.: Mr. R. M. Richardson, Hillville Rd., Tinonee, 2430. Phone: Burrell Creek 28.

Shoalhaven Orchid Society. EIGHTEENTH ANNUAL ORCHID EXHIBITION. Conrad's Motor Showrooms, Kinghorn St., Nowra. Friday, 14th Sept., noon to 9 p.m., Sat., 15th, 10 a.m. to 9 p.m., Sun., 16th, noon to 6 p.m. Venue subject to change. Hon. Sec.: Mrs. H. Watts, Penguin Head Rd., Culburra Beach, via Nowra, 2540. Phone Nowra 47 1369.

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SS188	Den. Compactum 'Hartleys' x Compactum 'Sunshine' (N.Q. species)	2" pot
SS198	Epidendrum Atropurpureum 'Roseum' x Self	2" pot
SS192	Angraecum Veitchii (Large cream blooms)	2" pot
SS149	Den. Diane McFarlane (see coloured plate A.O.R. Mar. '71 issue)	2" pot
SS116	Den. Maui Beauty x Dee Lynn (Dark, exhibition)	2" pot
JA66	Vanda Rothschildiana (Large blue)	2" pot
JA63	B.L.C. Sunset Bay (Red colouring)	2" pot
SS141	Phal. Zada x Barbara Beard AM/AOS (Pink)	2" and 3" sq. pot
SS118	Phal. Dos Pueblos AM/AOS x Scottie Maguire AM/AOS	2" pot
SS159	Phal. Daryl Beard HCC/AOS x Fuscata (Yellows)	2" pot
SS148	Den. Pale Face x White Egret (Full white)	2" pot
SS136	V. Mary Foster x Kamahele x Ascda. Meda Arnold 'Loretta' AM/HOS	2" pots

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South Coast Orchid Society. WINTER SHOW. Corrimal Methodist Centre. Saturday, 14th July, 10 a.m. to 9 p.m. SPRING FESTIVAL. Corrimal Methodist Centre. Thursday, 13th Sept., 2 p.m. to 9 p.m., 14th, 10 a.m. to 9 p.m., Sat., 15th, 10 a.m. to 9 p.m. Corrimal is a lovely hour's drive from Sydney by either the Coast Road or Prince's Highway. Turn right at Corrimal Post Office. Hon. Sec.: Mr. Frank Benson, 5 Waitangi St., Gwynneville, 2500. Phone 29 7548.

Tamworth Orchid Society. SPRING SHOW. Myer Ltd., Peel St., Tamworth. Friday, 14th Sept., 9 a.m. to 5.20 p.m., Sat., 15th, 9 a.m. to 11.30 p.m. Hon. Sec.: Mr. Max Tom, 6 Griffen Ave., Tamworth, 2340. Phone 66 4297.

Tuggerah Lakes Orchid Club. WINTER SHOW. RSL Reception Rooms, Anzac Ave., Wyong, Friday, 20th July, 8 p.m. ANNUAL SPRING FESTIVAL. Memorial Hall, Anzac Ave., Wyong. Friday, 21st Sept., 8 a.m. to 11 p.m., Sat., 22nd, 8 a.m. to 9 p.m., Sun., 23rd, 9 a.m. to 5 p.m. Official opening 21st Sept. at 8 p.m. Hon. Sec.: Mr. C. Eyndhoven, P.O. Box 122, Wyong, 2259.

Tweed District Orchid Society. SPRING SHOW. Autumn Club, Murwillumbah, Wed., 29th Aug., 5 to 9 p.m., Thurs., 30th and Fri., 31st, 9 a.m. to 9 p.m. Hon. Sec.: Mr. B. Chick, 16 Wade St., Murwillumbah, 2484. Phone 72 2753.

NEWCASTLE AREA

Newcastle Orchid Society. 25th ANNUAL ORCHID EXHIBITION. City Hall, Newcastle (Supper Room). Thursday, 13th Sept., 1 p.m. to 10 p.m., and Friday, 14th, Saturday, 15th, 10 a.m. to 10 p.m. A mecca for Novacastrians! Hon. Sec.: Mr. N. L. Hellier, 17 Stanley Street, Merewether, 2291. Phone 61 2989.

Boolaroo Orchid Society. FIFTEENTH ANNUAL EXHIBITION. Big W, Jesmond Centre, Jesmond. Thurs., 20th Sept. and Fri., 21st, 9 a.m. to 9 p.m., Sat., 22nd, 9 a.m. to 12.15 p.m. Hon. Sec.: Mrs. H. M. Scobie, 71 Bay Rd., Bolton Point, 2283. Phone 59 1040.

Cooranbong Orchid Society. COORANBONG ORCHID SHOW. Avondale Village Hall. Wed., 26th Sept., noon to 8.30 p.m. and Thurs., 27th, 10 a.m. to 8.30 p.m. Hon. Sec.: Mrs. R. Duffy, 34a Avondale Rd., Cooranbong, 2265. Phone 77 1111.

Morriset & District Orchid Society. SPRING ORCHID EXHIBITION. Bonnell's Bay Community Hall. Friday, 14th Sept., noon to 9 p.m., Sat., 15th, 9 a.m. to 9 p.m., Sun., 16th, 9 a.m. to 3 p.m. Hon. Sec.: Mrs. J. M. Farleigh, 25 Amos St., Bonnell's Bay, 2264. Phone 73 1484.

QUEENSLAND

Gold Coast Orchid Society. SPRING SHOW. Show Pavilion, Owen Park, Southport. Friday, 31st August, 9 a.m. to 9 p.m., Sat., 1st Sept., 9 a.m. to 5 p.m. Hon. Sec.: Mr. C. H. Rahner, P.O. Box 323, Burleigh Heads, 4220.

Eastern District Orchid Society. SPRING SHOW. Guardian Angels' Hall, Bay Terrace, Wynnum Central. Fri., 31st August, 9 a.m. to 9 p.m., Sat., 1st Sept., 9 a.m. to 4 p.m. Hon. Sec.: Mrs. M. Walker, Box 60, Wynnum Central, 4178. Phone 96 3200.

Mackay & District Orchid Society. Only one Show is held each year. This is an Autumn Show held in conjunction with the Mackay Tourist Festival, invariably on the second Friday and Saturday of April. The Show is non-competitive but features fine hardcanes and other warm growing orchids. The Society meets in the Town Hall, Main St., Mackay, on the third Thursday in each month. Hon. Sec.: Mr. Lewis Dovey of 18 Mogford St., West Mackay, Queensland 4740.

North Coast Orchid Society. FIFTEENTH ANNUAL SPRING SHOW. Civic Hall, Nambour. Friday, 14th Sept., 9 a.m. to 9 p.m., Sat., 15th, 9 a.m. to 8 p.m. Hon. Sec.: Mrs. V. Usher, Hobson St., Palmwoods 4555. Phone 45 9167.

The Toowoomba Orchid Society. SPRING SHOW. The Myer Roof Top car park. Saturday, 22nd Sept. (not Sunday) to Sat., 29th Sept., each day 10 a.m. to 10 p.m. A spectacular show. Hon. Sec.: Miss E. H. Miles, 6 Somme St., Toowoomba, 4350. Phone 32 7154.

West Brisbane Orchid Society. No public show but interesting meetings and displays on the fourth Wednesday in each month at the Bardon Community Hall, Bowman Park, Bardon, Brisbane. For details contact the Hon. Sec., Mr. R. Davis, 30 Grosvenor Rd., Indooroopilly, 4068.

VICTORIA

Geelong Orchid & Indoor Plant Club. SPRING SHOW. Guild Hall, Myers St., Geelong. Sat., 6th Oct., 2 to 10 p.m., Sun., 7th, 10 a.m. to 5 p.m.

Melbourne Eastern Orchid Society. WINTER SHOW. St. John's Hall, Camberwell Junction. Monday, 25th June at 8 p.m. THE WORLD OF ORCHIDS, 1973. Myer Shopping Centre, Chadstone. Friday, 21st Sept. and Sat., 22nd, 10 a.m. to 10 p.m., Sunday, 23rd, 10 a.m. to 4.30 p.m. Hon. Sec.: Mr. K. H. Bruce, 31 Glen Ebor Ave., Blackburn, 3130. Phone 878 0247.

Mornington Peninsula Orchid Society. SPRING SHOW. Mornington Shire Hall. Sat., 20th Oct., 9 a.m. to 9 p.m., Sun., 21st to 5 p.m. Proceeds to Girl Guides.

Warrigal Orchid Society. SPRING SHOW. Northland Shopping Centre, Murray Rd., East Preston. Fri., 12th Oct. to Sun., 14th Oct.

SOUTH AUSTRALIA

The South Australian Orchidaceous Society. SPRING ORCHID SHOW. Myer Emporium, Rundle St., Adelaide. Tuesday, 18th Sept. to Friday, 21st inclusive, 9.05 a.m. to 5.30 p.m. A fine curtain raiser for the Third Australian Orchid Conference. Make a point of arriving in Adelaide a day or two early! Hon. Sec.: Mrs. E. G. Shawyer, 60 Balfour St., Nailsworth, 5083. Phone 44 4260.

Whyalla Orchid Club. SPRING ORCHID FESTIVAL. Westland Shopping Mall. Thurs., 4th Oct., 9 a.m. to 5.30 p.m., Fri., 5th, 9 a.m. to 9 p.m., Sat., 6th, 9 a.m. to 11.30 p.m. First time in a shopping mall and destined to be a big success. Hon. Sec.: Mr. M. F. Dennis, 265 Jenkins Ave., Whyalla Stuart 5608.

TASMANIA

Orchid Society of North Western Tasmania. SPRING SHOW. Burnie Town Hall. Tuesday, 16th Oct., noon to 9 p.m., Wed., 9 a.m. to 9 p.m., Thurs., 18th, 9 a.m. to 5 p.m. The Society's second three day show. Hon. Sec.: Mr. P. Jackson, 58 Jorgerson St., Burnie. Phone 31 4915.

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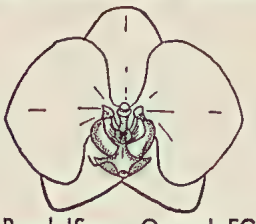
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VOLUME 38, No. 3 PRICE 50c SEPTEMBER, 1973



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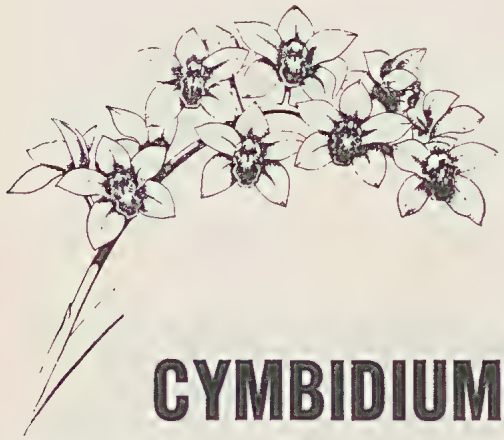
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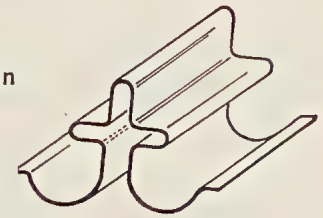
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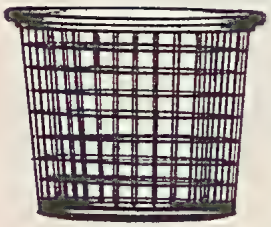
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To alleviate to some extent this added burden on subscribers it is intended to introduce a two-year concession rate of $5 for two years' subscription and subscription renewal notices will incorporate this offer.

Australian Orchid Review

SEPTEMBER, 1973 VOLUME 38 No. 3

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Orchid names: A species of orchids has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

Within the *Cattleya* Alliance are some of the most spectacular of all orchids. Modern hybridising has broadened the range of fine shapes and colours. Colours can be subtly soft or strikingly vivid. This fine group of hybrids shows the peak attained by selective breeding. Articles in this issue, commencing on pages 133 and 145, explain growing methods in Australia. Photograph courtesy of Schaffer's Orchids and Mr. B. C. Schwartz.

Announcement

For thirty-seven and a half years the *Australian Orchid Review* has been produced by the printing house of Shepherd and Newman. They financed it on behalf of the Orchid Society of New South Wales, nursing it through a long period of no profits, then through the difficult war years.

As the circulation increased they improved the print quality of the magazine with better paper, more pages, more illustrations and recently with more colour.

The late Judge H. F. Markell, then the Founding President of the Orchid Society of N.S.W., wrote in his foreword to the first issue: ". . . the sponsors of this publication feel that the need has arisen for expression, in concrete forms, of the experience of orchid growers with reference to local conditions".

Over the years the *Australian Orchid Review* has inspired experienced growers to record all aspects of growing orchids under Australian conditions. It has provided a forum for all State Societies, and a unifying force too. It has covered an era commencing with four Societies in Australia with a few hundred members, to a stage where there are over 100 Societies and thousands of enthusiastic growers. It has publicised such events as Australia's Sixth World Orchid Conference, other World Orchid Conferences, the creation of the Australian Orchid Council and the benefits it provides, and much more. Above all, we hope it has served well its main purpose of helping the orchid grower, whether novice or experienced.

Now there is a change which will eventually mean more benefits for readers.

Like many printers today, Shepherd and Newman found that their city land and building was worth considerably more than their business. They have accepted a substantial offer from a developer, and because of the heavy expense of re-establishing elsewhere, are closing the business.

The *Australian Orchid Review* will in future be published by *The Harbour Press,* of 120 Chalmers Street, Surry Hills. *The Harbour Press* is an old and highly experienced firm of publication printers with a very efficient plant larger than Shepherd and Newman.

They have a full time staff specialising in maintaining subscription lists, thus ensuring rapid mailing of journals.

Editorial policy will continue to be controlled by the Management Committee of the Orchid Society of New South Wales. All editorial matter is to be sent to the Editor at 57 Mt. Pleasant Avenue, Wahroonga, N.S.W. 2076.

Matters relating to subscriptions and advertising should be directed to *The Harbour Press,* P.O. Box M60, Sydney Mail Exchange, N.S.W. 2012.

AUSTRALIAN ORCHID COUNCIL

Thirteenth Annual Meeting

This meeting is to be held in Adelaide on Wednesday, 26th September, 1973. A heavy agenda covers such items as Awards, conservation and of course, determination of The Australian Orchid of the Year. The current Third, and projected Fourth and Fifth, Australian Orchid Conferences will also be considered.

An important item on the agenda is consideration of a submission by Victoria relative to Plant Breeders' Rights. Queensland O.S. has suggested the creation of an "Award of Achievement" and abandonment of "Australian Hybrid of the Year".

N.S.W. has submitted suggested standards for Australian Native Orchids, and for Australian Native Orchid Hybrids. The N.S.W. Orchid Society has had a standard for native orchids for several years and the new standards are the result of this experience plus suggestions from the Australian Native Orchid Society.

A full report of the A.O.C. Annual Meeting will be presented in the December issue.

SECOND N.S.W. REGIONAL CONFERENCE

This Orchid Conference is scheduled to take place in Newcastle over the October, 1974, holiday weekend with Newcastle Orchid Society as the host society. Venue will probably be one of the fine motels overlooking Bar Beach. As well as social and educational sessions the Newcastle O.S. is arranging trips to the Hunter River vineyards, the steelworks and — for the venturesome — a visit down a coal-mine.

Those who took part in the First N.S.W. Regional Conference at Port Macquarie will certainly wish to be at the Second; and those who missed out on the First — well, here's your chance to catch up. Interstate visitors very welcome.

Growing Orchids in the Inland

RICHARD J. LORD

Tamworth is situated in a basin between the Great Dividing Range and the Liverpool Ranges at a Junction of the Peel and Cockburn Rivers. It is about 280 miles North West of Sydney and about 100 miles from the coast as the crow flies.

The fact that Tamworth is in a basin and also on the wrong side of the Great Dividing Range can make orchid growing very trying at times. This is because of the extreme heat of summer and the cold of winter. The temperature ranges from about –5 degrees Celsius to 40 degrees Celsius.

The native orchid grower here has a fair storehouse of species to choose from with *Cymbidium canaliculatum, Dendrobium linguiforme* and greenhoods in the immediate vicinity. If one likes to go over the mountain towards the coast we find *Dendrobium speciosum, Dendrobium beckleri, Dendrobium aemulum, Dendrobium pugioniforme, Dendrobium teretifolium, Dendrobium gracilicaule* and various *Sarcochilus* varieties including Tangle root, orange blossoms and raspy roots.

Most growers have a glass house or hot house. Because of the heat of summer, humidity is fairly easy to maintain but the high temperatures can be very damaging. The high light intensity means the conventional type of glass house is very far from ideal for the growing of orchids. Conventional glass houses, with glass all the way down, originated overseas where the prevailing temperatures are anything up to 30°F lower than inland Australia.

I think the ideal type of orchid house for the inland should be constructed on the following lines.

The house should run north and south, all walls to be solid to the level that will eventually be to the top of the pots. The south and western walls to be all solid, the reasons being that the frost and cold winds usually come from the south and plants can be easily frost bitten through glass. Westerly winds and hot afternoon sun in the summer can burn plants especially if wet. I find fibro is very good for the solid walls.

A good system is to have a peaked roof completely airtight making a dead air cell which will act as a massive insulator, the western side of the roof should be a solid material. If galvanised iron is used it should be lined to cut the heat radiation. The eastern side of the roof should be covered with fibreglass sheets. I prefer fibreglass to glass because of the frequency of hail storms in the spring. Fibreglass seems to resist hail better than glass and is also easier to install than glass sheets and glazing bars.

In the country we have a choice of four methods of heating the orchid house in the winter. These are electricity, gas, oil and kerosene.

Electricity:—I think this is the best and easiest. Insulated cables laid under the benches and controlled by a thermostat; all the trouble is taken away and is extremely reliable. Heat banks may also be good and cheap if heated off peak but the initial outlay may be too costly.

Kerosene:—While the heater is new there are no problems but when it gets old and dirty, fumes, unless well vented, can invade the atmosphere and cause bud drop and general deterioration of plants, also heater can be knocked over and cause a fire or may be wet internally resulting in a dirty job of cleaning.

Gas:—Fumes can be lethal to orchids but if well ventilated can be very reliable, no mess, but one has to light every night.

Oil:—This is the system I prefer. Second hand oil heaters can be obtained very cheaply now because many people are now changing to more modern oil heaters and the old ones have very little resale value. The heater can be turned up or down as required. The variety of oil heater with a fan inside is worth trying to get, this type of heater has a better heat distribution. The flue of the oil heater can be taken down under the benches and will distribute any waste heat that would normally go out the roof.

A good series of articles on heating appeared in recent editions of *Australian Orchid Review,* for more information refer to these articles.

At 40°C which is reasonably common in the summer, orchids are suffering from heat exhaustion and everything possible must be done to lower the temperature. The usual methods



Interior of Mr. Lord's glasshouse.

are to use evaporation of water, electric fans and shade trees.

Because of the frequency of damping down needed we have to have a change of compost from the usual as a heavy compost will hold too much moisture and allow fungi to get the upper hand.

Fertilization must be frequent as most nutrients are washed out with the watering. Some of the slow release fertilizers are very good in this regard especially the ones with larger granules as these are not washed straight out the hole in the base of the pot.

Cattleyas seem to grow well in large pieces of fir bark, charcoal and tree fern either on their own or mixed. Massive root systems are produced and new leads grow very rapidly. The best results are obtained from the Autumn flowering types of Cattleyas and also bifoliates which regularly flower twice a year. I put this down to the fact that the flower spikes do not have to grow through the cold winters where a frost is had nearly every night.

Phalaenopsis. I am only in the trying stage of this genera but the ones that I have seem to be growing very well and rapidly. They are growing on tree fern chunks in a wire basket. Plants were obtained in August, 1972 in 2" pots and now have a leaf span of about 9" and have long green tipped roots. I found that Phalaenopsis need more heating in the winter than other genera seem to survive on.

Paphiopedilum. This is one genera that I have not had any success with, in fact I am now back to one paphiopedilum, Insigne, that is looking very sick. I have tried various types of compost and feel my lack of success is in not getting the correct compost for our climatic conditions.

Oncidiums. These grow very well especially on tree fern slabs. I originally had these in pots with bark compost but they did not perform very well, now that they are on slabs the roots can be observed. They seem to like a lot of water when the roots have green tips. The art of growing this genera seems to be to let the plant dry out completely between waterings and fertilize fairly regularly with a weak solution of fertilizer about $\frac{1}{2}$ strength.

Vandas. The only trouble I have so far is that I may have to raise the roof of my orchid house or cut a hole in the roof to let the plant keep growing. The speed that these grow is remarkable, one has grown about 15" since last

spring, and is now (early June) showing two flower spikes and maybe a third coming through.

Vandas are grown in cement pots for weight with stones in the base and large pieces, 2"-3" square fir bark and tree fern chunks on top. The growing medium does not stay wet for long so in very hot weather they are sprayed a couple of times a day.

Vandas like fairly heavy fertilization and frequently. I try to train the roots to be close to the pot, by wetting and slowly bending in required direction. To bend a root at right angles may take a week or more as bending has to be done carefully or roots will break. I find vandas need their roots close together to get maximum goodness from watering and feeding.

Soft cane dendrobiums grow very easily and quickly but are not as easy to bring to flower as the coastal grown ones.

Cymbidiums. Cymbidiums need a great deal of care, a lot more than those grown in cooler climates. Unless cooling is easy to maintain I would not grow them. Continuous damping down to keep them cool only causes black rot, so some other method has to be found. I haven't found one yet so most of my cymbidiums have suffered this year. The availability of thick leafy trees is to some advantage as orchids can be given a reasonable amount of protection under these. Some very fine flowers have been grown in this area but the plants haven't lasted very long. Red spider is another adversity to the growing of cymbidiums as these seem to be constantly on the attack regardless of spraying.

The fertilization of cymbidiums needs to be given more study than other genera as the roots seem to be more easily burnt, this is another section of orchid growing that is still in the experimental stage as most formula are given for coastal growing.

It is hard to know what to do about the best way to grow cymbidiums and I will have to do it on a trial and error basis and hope I do not lose too many in the process.

One of the greatest aids in growing orchids in the inland is to join an orchid society. This may involve the actual formation of such a society but is well worthwhile because you meet other people who are trying to do the same as you and to get the knowledge of their experience from them. When Tamworth Orchid Society was formed two years ago I thought very few people grew orchids in the area and I have learnt a lot.

11 Griffen Ave., Tamworth



Q.O.S. AWARD

Vanda Tubtimtepya, HCC/QOS

Cultural Conditions described by its owner, Mr. Ted Gibbons.

The Vanda, a cross between *V. sanderana* and *V.* Gertrude Miyamoto, was purchased by my wife as a seedling in a three inch square pot, whilst on a visit to N.Q. In fact it was the trip organised by the Q.O.S. following on the W.O. Conference in October 1969. It came from John Walker's nursery.

This 4" plant was repotted into a bark and charcoal mixture with a generous feeding of bone meal and Aquasol as a balanced fertiliser. The growth was good, and I had to pot on twice, into an 8-inch and then a 10-inch pot.

The first flowering came in March 1972 and this was followed on by another in 1973 by the spray which won the 1973 Q.O.S. Autumn Orchid Festival Championship and the H.C.C. Award.

In 1970-1971 the plant was kept under glass 50% shaded, but in 1972 I decided to put it out in an open house and all the Vandas I may say have flourished there. This house has walls 8' x 2' copper gauzed bottom and 6' glass sides with Sarlon 52% roof.

The rain or creek water used is very soft and smog is non-existent.

The elevation of my home and surroundings is 2000 ft. and during wet spells we frequently go into the clouds and this seems to be very much to the plant's liking. Temperature range would be on the average of 8° to 10° below Brisbane's, but it is frost free and the nights are always cool. *Mt. Glorious, Queensland*

HOUSING YOUR ORCHIDS, PART II

THE SIMPLE BUSH HOUSE

RONALD KERR

Uppermost in the mind of a would-be orchid grower is the thought: "A nice hobby but it's too expensive for me". Too often a lifetime of enjoyment is missed when someone lets this negative barrier deter them.

Of course you can do wonders with expensive housing, and a new grower should hope to have a fine glasshouse one day, but immense satisfaction can be obtained by starting with simple equipment.

The steady building up of a worthwhile collection over a period of years is a matter of self fulfilment, and we can be all the more pleased with ourselves if we achieve it the hard way.

Accompanying illustrations show two bush houses which have been built on a shoestring. The materials used are bush timber and wire netting. Something like making a fowl house. The wire netting came in scraps from a dump, also the corrugated iron used for some benches.

Strips of tea tree are woven into the wire netting to give any required degree of shade, and of course, any or all of these can be removed in winter months.

In some places Councils could object to this type of structure, and enquiries should be made before commencing to build. In country areas this is not such a problem. In most urban areas, substitution of shadecloth for wire netting will generally satisfy those councils which object to wire netting structures. This will increase the initial cost. In such a case, plan your first house to a size which can be made with a 100' roll of shadecloth. If it is built in modules of 6' it will be easy to lengthen later.

The simplest form of house is one with benches 30" to 36" wide down each side and a 36" passage down the middle. The upright posts can be spaced 6' apart, since this is a standard width for 2 in. mesh wire netting and also for shadecloth.

Provide as much headroom as possible. The minimum should be 7'6", with 9' desirable. The extra height allows light-loving orchids to be hung high.

If shadecloth is used, a module based on 6' between posts and 9' high x 9' broad would require about 27', or enough for three modules or bays and the closing of both ends. The door can be a light wooden frame with shadecloth tacked thereon.

Of course, if bush timber is not available 4" x 2" hardwood lumber may be used, but this will increase the cost. The posts and rafters, whether bush timber of say 6" diameter or lumber should NOT be painted with creosote to preserve them. Creosote gives off fumes for months which can be harmful to orchids. Two coats of Tung Oil make a better preservative in this case. Your paint merchant probably wouldn't have a clue if you asked him for Tung Oil, so ask for Clear Paving Paint instead. It's the same thing.

It is best to put wire netting under shadecloth because this stops sag and lengthens the life of the cloth. So if you start with wire and tea tree only, the wire will not be wasted when you are ready for shadecloth.

Wire netting is coated with zinc and zinc is poisonous to plants. It is therefore advisable to paint any overhead wire with silver roof paint.

A house designed for one 100' roll of shadecloth would be 18' x 9', with 39' of benching. Filled, it would represent a good collection.

It is not essential to have a long house. Almost any shape to fit a corner or an angle in a yard will do, and fences can form walls. The size of the house will affect the sizes and positioning of the benches. Thus three benches will require two passageways, and if these are all 3' wide the house will be 15' wide. In a three bench plan, the centre bench may be much wider because it can be reached from both sides. This increases the width of the house but still keep to the 6' modules because this is the width of wire netting or shadecloth.

Siting of the house is important and the aim should be to have the protection of a house, wall, fence, cliff or at least a hedge, on the south side. Also, on the west side, if it is subject to sustained drying winds such as those the Sydney district usually receives in August.

The house may run north to south, or east to west. Whichever way it is, there will

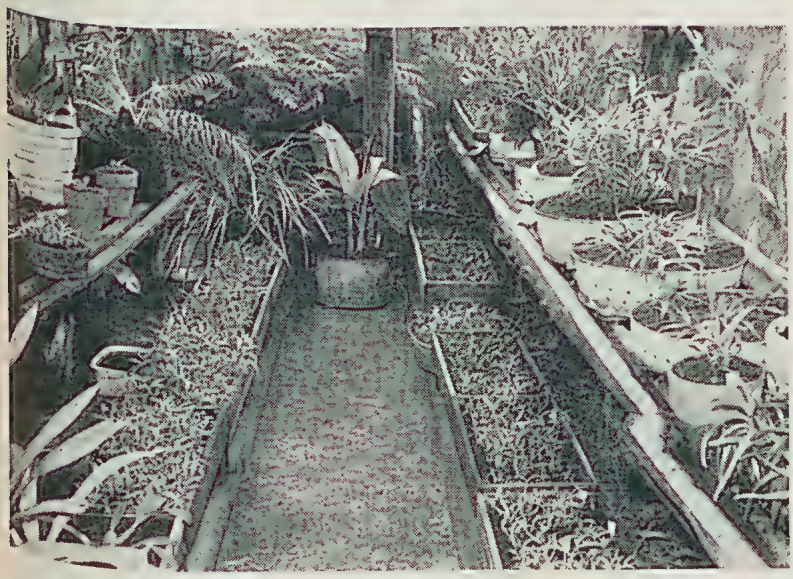
always be during the day a bright side and a dull side, a warm side and a cool side. You will need to learn which orchids like the light, and those which savour the shade, and place them in the house to the best advantage. Learning to do this is part of the fun of cultivating them.

If strong winds prevail from an unprotected direction then polyethylene strips 3' wide or more can be placed along the netting during the windy season. This will break the wind without interfering with the passage of light. You can of course build up the side walls with a windproof material such as fibro to a level equal to about the top of the pots. You save some money on shadecloth to offset the cost of the fibro.

Hardwood battens may be used as a bench, and this is, in fact, a necessity where very quick drainage is essential, such as for some epiphytic orchids like oncidiums and strapleaf vandas. These two types of bench are not the only suitable ones but they are the easiest to provide for a house of this type.

As long as they do not interfere with light reaching the orchids it pays to have ferns and other moisture loving plants around the perimeter of your bush house. The need to keep these well watered helps to create humidity for the orchids.

Benches should be about 32" high, but it is generally an advantage to have a bench on the south side 4", or even 6" higher. This avoids having the plants on this side completely overshadowed by plants on the sunnier northern side.



The neatness of this country bush house is a credit to its owner, Mr. Gil Wallace. This photo was taken years ago when Mr. Wallace was just starting in orchids. Today, Mr. Wallace is a first rate grower of cymbidiums and softcane dendrobiums. The orchids in this house are natives — all easy and rewarding orchids for beginners in most areas.

A gentle wind coming off water is an asset, particularly in summer, because it helps assure a high relative humidity. The eastern coastal fringe of Australia is lucky in this respect.

The wire wall construction has the advantage of permitting active air movement around the plants. This is not only important to their growth but it prevents the dankness on which unfriendly fungi and bacterial rots thrive.

Air movement is particularly necessary when corrugated sheets are used as benches. Corrugated iron, or better, corrugated fibro, is easily laid on bush timber or lumber supports. It should be covered with charcoal, coke or pebbles, coarse enough to permit drainage but able to stay wet enough to create some humidity.

Paths may be well pounded down earth but this can get sticky when wet. Pebbles or ashes can be used effectively, also old bricks. All these hold some moisture to aid the humidity of the house.

In very dry climates, a heavy bed of wood chips or sawdust can be put down to a depth of 12" or even 18". When kept thoroughly wet this creates a nice humidity. If this is used then a wall of iron or fibro to about top-of-pot height is necessary around the bottom perimeter of the house.

Sawdust can be a danger. It will eventually rot and attract all kinds of pests, even white ants. It is advisable to replace it yearly.



This photo was taken in winter when the tea tree had been removed from the wire. As explained in the text the galvanised containers are too large: overpotting is a common fault with beginners. Note the 4" pots hanging high where they get maximum light. A galvanised iron wall to about 3' high protects the pots from wind.

The basic structure may be improved upon or added to, as circumstances demand, and as your range of genera grows. Corrugated plastic sheeting — use clear, NOT coloured — can be used to close the windward wall first, and eventually even the roof.

Roof cover gives greater control over watering, and flowers are best if protected from rain.

The illustrations indicate how the simple wire and tea tree structure can be kept neat and tidy. Both show a fault common to beginners, namely the use of over-large pots. In this case, containers from a dump have been used, and while there is nothing against this if it enables you to get a collection started quickly, too much compost relative to root size can quickly go sour and cause root rot. Besides dendrobiums do much better if slightly under-potted.

You would not have started your bush house without some idea of the orchids you would like to grow, and it is advisable to talk over the practicability of growing them under your conditions with a grower friend. If you haven't a grower friend look around for an orchid house in someone's backyard, then barge in and introduce yourself, and start asking questions. You'll make a friend for life.

If you can, join an orchid society. You'll get plenty of other peoples' experience this way and that's the cheapest kind. And buy a good orchid book. Top off with a subscription to this magazine.

With a bush house like this, you need to seek out the orchids which naturally do well in your climate. In tropical Queensland, you can grow almost anything save cool growers like cymbidiums, odontoglossums and masdevellias. South of Brisbane, there may be odd spots you can grow hardcane dendrobiums without heat but you can waste time and money trying. Avoid disappointments by sticking to the genera from which you can be sure of getting good results.

Cymbidiums thrive in all the non-tropical coastal regions. They will even do well in hot areas providing there is a regular night temperature drop of 20°F. and you damp down thoroughly on hot days.

Native dendrobiums can be grown well in most parts of Australia, except that *D. kingianum* dislikes the tropics, and a few tropicals need heat south of Brisbane.

For variety there are orchids which welcome the same conditions as cymbidiums. Some of these are *Zygopetalum mackayii*, *Aerides vandarum*, *Bifrenaria harrisonae*, *Brassia verrucosa*, *Coelogne cristata*, *C. flaccida*, *C. massangeana*, *Paphiopedilum insigne*, *P. fairrieanum*, *Dendrobium nobile* and other softcanes, *Dendrochilum filiforme*, *Epidendrums* of the reed cane type, *Laelia anceps*, most *Oncidiums*, *Vanda sauvis*. There are many more but the above are good ones with which to get experience.

Establishing a bush house and orchid collection is a matter of ingenuity rather than spending a lot of money. Get started with growing, then plan for a more elaborate growing house and a wider range of orchid genera in the not too distant future. Subsequent articles will describe more sophisticated establishments.

57 Mt. Pleasant Avenue, Normanhurst 2076



Above: *C.* General Patton x *Blc.* Nacouchee. A complex hybrid involving three genera: *Brassia*, *Laelia* and *Cattleya*. This clone indicates the high standard of culture achieved in Australia. Owned by Mr. Gordon Giles of Sydney, the plant was judged "Champion Other Orchid" at the Orchid Society of N.S.W. Winter Show, and also awarded the A.O.C. Certificate.

Photo: A. B. Porter



Below: The group which won "Best Six Paphiopedilums" for Mr. Reg Trennery at the Orchid Society of N.S.W. Winter Show. It was awarded a Gold Medal, and a total of seven prizes. The group includes *P.* Sheerline 'Rondo' (best green or yellow), *P.* Orchilla 'Chilton' (best red), *P.* Cockade 'Chilton' (best spotted), P. Sharndon (second in best spotted), P. Stoke Poges 'Buttermilk' (best any other colour) and P. Horney (second in any other colour). Truly a fine effort.

Photo: A. B. Porter

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Single flower of *Cym.* Joyce Duncan 'Susan Hughes'



ERY



Two orchid queens

Above: *Lc.* My Fancy 'Inferno', HCC/AOS. Spectacular colour is a feature of many flowers of the cattleya and allied genera, whether they be species or hybrids. This fine intergeneric hybrid is the result of a mating between a *Laelia* and a *Cattleya,* normally indicated in the name by abbreviating to *Lc.* The surfix HCC/AOS indicates it has received a Highly Commended Certificate from the American Orchid Society.

The cross was made by Shaffer's Tropical Gardens of Florida, U.S.A.

Photo: Courtesy of Shaffer's and Mr. B. Schwartz



Right: *C.* Mt. Hood 'Joy'. Delicate pastel colours have their own charm and in this fine orchid they are combined with outstanding shape.

Photo: B. Schwartz

CULTURE OF CATTLEYAS

BERT C. SCHWARTZ

Cattleyas are probably the most widely grown of orchids all over the world. Their sheer beauty attracts the grower and challenges him to try his prowess with them. Not for nothing are they known as the "Queen of Flowers". Not many orchids have a perfume, but most Cattleyas have a delicate perfume, noticeable in the early morning and late evening. To walk into a house full of flowering Cattleyas is a wonderful experience. One is left spellbound by the magnificent range of colours from glistening white, reds, green, yellows, lilacs and delicate pinks. If you are a flower lover you simply must try your hand at growing some of this wonderful genus.

Cattleyas like a warm humid place to grow in such as a glasshouse; the grower should try to duplicate as nearly as possible the conditions Cattleyas grow in their natural habitat, therefore, a glasshouse is essential. Some form of heat is another desirable feature, whether hot water supplied by a boiler with pipes under the benches or electricity or an oil-fired burner. Some growers use propane gas burners with great success. Whatever is used, it must be easily controllable. The temperature range for Cattleyas is not great, 58 degrees F. being the minimum temperature and approx. 80 degrees F. the maximum; any lower or higher temperature is not good for the plants.

When a heater is used, some form of water spray is essential to combat dryness brought about by artificial heat. The water pipes are usually placed just under the benches with the fine nozzle sprays placed along the pipes to form a mist spray which is directed away from the plants.

Another device to introduce humidity is a humidifier; there are several on the market which are automatically controlled and this is the best possible way to give the plants the humidity they require.

Some growers would say, "What do we need all this for?" Believe me, a glasshouse under the full rays of the summer sun causes the temperature to rise very quickly and goes well over the 100 degrees. If the house hasn't any form of cooling device, plants rapidly dehydrate and lose much of their water content and if it isn't replaced very quickly the leaves will burn and the plant will ultimately die, because of dryness and heat.

To grow Cattleyas one must have these essential devices. The same as a tradesman who has to use tools like a carpenter or plumber, so a grower must have and use the heaters, misters and fans as tools to grow the plants correctly.

So far we have a glasshouse, heater, misters and last of all but most necessary is a turbulator fan for the movement of air. The action of a turbulator is to draw air from the ground level of the glasshouse and distribute it up and around the plants. The use of the turbulator is essential particularly when the plants are in flower. With the correct humidity 60%, heat say 65° and the air movement provided by the turbulators, flowers will keep their freshness for up to 4 and 5 weeks, depending upon the breeding of the plant. Without the turbulator, this is not possible, because if one allows the humidity to go beyond and rise higher than the 60% or if the house becomes dry, flowers will develop sepal wilt on the dorsal first of all and then spread to the other parts of the flower, the last part to be affected is the labellum.

In glasshouse culture the ever-present fungus disease *Botrytus* is always ready to develop on the flowers and cause spotting, a faint peppering of spots first appears, then as the fungus takes hold, spots become heavier and the flower is spoiled. This fungus is usually caused by excessive humidity particularly at night when humidity usually increases. If the house is allowed to go colder than the 58 degrees, the tendency is for the humidity to rise rapidly and the only way to remedy this is to make sure the temperature is on the rise and not falling. This also applies on wet and miserable days. It's better to keep your house snug and warm 60-65 degrees F. and you will have no trouble with *Botrytus* fungus. It's better to have correct conditions than to use fungus sprays.

Another cause of complaint among growers is the dampening off of flower sheaths. This too is caused by excessive water, either in the atmosphere or by incorrect watering. The indication of sheath damage is first noticeable by the sheath losing the green colouring and turning pale yellow. This is a sure indication that either sweating or water has got inside the sheath. If the outside sheath is not split lengthwise to dry out the buds which are just forming, it will surely result in the loss of the buds

and the grower has to wait another year for the plant to flower again. Again it must be emphasized that incorrect conditions is the cause here, due to excessive humidity — cold conditions — or overwatering. The grower can readily see the importance of having a correct balance of light, humidity and warmth so that nothing happens to the buds in the sheath.

Some growers also have trouble with the flower stem, particularly with the Brassias, they are usually very large flowers and are heavy. When the buds are emerging from the sheath, the stem is very soft and brittle and can easily snap off with the weight of the buds.

If the plants have had correct light conditions during their growing period, this will not occur; it's only when Cattleyas are grown in insufficient light that the stem will not support the inflorescence.

In the old days when Cattleyas were given heavy shade conditions, this feature was common, but since growers have increased the light to approx 3,000 foot candles this has eliminated this trouble.

Growers will find that orchids will grow in any compost and Cattleyas are no exception. They grow in all kinds of mix — some growers use Todea Fibre, others various composts of bark. One that I've found that suits me is as follows:—

1/3 Aust. Tree fern fibre chopped up into inch squares (brown or black)
1/3 Peatmoss Medium grade and 1/3 of charcoal Medium grade
Polyurethene mixed together for drainage.

This compost lends itself to fertilizing once a fortnight either with organic or inorganic fertilizer preferably given alternatively in a weak solution. It is usually a teaspoon to the gallon of water, either sprayed on or applied by watering can. The latter method is the best, but if one has a considerable number of plants, it becomes arduous to say the least.

Of course the best fertilizer of all is liquid cow manure. It has several drawbacks however; after cooking for a week one is conscious of a sharp attack on the nasal organ and if your neighbour has a delicate nose it usually brings him out fighting and complaining most bitterly, so if you don't want to strain the friendship better cover it with a lid.

When the liquid becomes placid enough to use, strain through a stocking before using, otherwise it will clog the spray or watering can rose.

How to use it. Draw off a quantity and add water until it's the colour of weak tea.

TIME TO POT

When the plant has its front leads over the side of the pot. Select a pot which will give you two years of growing; always place back section of plant hard against the side of the pot so that the plant can grow forward.

If using plastic pots, and I strongly recommend their use, make sure adequate drainage is provided for the plant, either crock the bottom of the pot up to 2" of broken crock placed lengthways so water can go straight through or if you don't want to do this cut extra drainage holes in the side and bottom of the pot.

The ideal time to pot or pot on is to wait until the new lead shows sign of root activity at the base, when you see this, that is the time; do not allow roots to grow past a half an inch, if they are longer than this they are extremely brittle and will break easily. This causes a check in the growth of the lead and it will not flower the best.

If by some chance you have left the potting too late, but the compost has deteriorated and the plant must be repotted, cut off the roots to a length of about 6". At this length they will callous and form branch roots.

Each pseudobulb actually is a plant by itself with three basal eyes ready to go. But if you want to propagate, cut off a section of 4 pseudobulbs to make a strong division, any smaller than this causes a delay in the growth of the new plant and takes much longer to develop into a robust and vigorous plant.

Attack by Scale and Mealy Bug can be prevented by the use of Albarol (White Oil). This is used to smother these two pests; add a little Malthion to kill ants as they are the carriers. This not only kills the pests, but also cleans the plants and seems to promote a better growth. When potting a plant, always scrutinize carefully the base of the rhizome where the eyes are. If there is any scale present or mealy bug this is the spot they will attack first and many a plant has been lost because of damage sustained to the eyes by scale. Go carefully over the rhizome with a soft toothbrush dipped into a solution of white oil and Malthion and scrub off, particularly under the old husks left on the plant.

Of course these are only the basic principles of growing Cattleyas, but one of the best ways to develop your prowess as a grower of this fine genus is by observation of your plants needs. Good growing.

1178 *Forest Road, Lugarno, N.S.W., 2210*

ORCHID SOCIETY OF N.S.W.

Winter Show at Hornsby Westfield Plaza



One of the malls showing the way the twelve Society exhibits were distributed throughout the centre. The public were enthralled with the exhibits. Mr. R. Trennery's exhibit is shown opposite in colour and included in it is the Grand Champion, *Paphiopedilum* Orchilla 'Chilton'. Reserve Champion was Mr. S. Condon's *P.* County Fair 'Bambi'. Champion Other Orchid was the beautiful cattleya, *C.* General Patton x *Blc.* Nacouchee shown opposite in colour.



View of another Westfield Hornsby Plaza Mall. Winner of the Best Society Display was Eastwood O.S., with Five Dock R.S.L. second, and North Shore O.S. third. Pointing of the displays was remarkably close throughout, indicating the general high standard of the plants. Best Export Orchid class was won by Dr. W. Baker with a cross between *Cymbidium* Sussex Dawn and C. Stanley Fouraker. This was a large white with all the flowers displaying themselves well.

The decorative classes were much talked about features of the Show. These three exhibits are a sample of the high standard of them all. Prize winners in these classes included Mrs. Peaty, Mrs. Hansen, Mrs. Pickrell, Mrs. Hughes and Mrs. Petith. Besides contributing to the success of the decorative section, the lady members were powerful helpers behind the scenes and the Society owes them a debt of gratitude.



Photos: A. B. Porter

O.S. OF WESTERN AUSTRALIA

Winter Show 1973

H. J. LODGE

This year's show was at the Booragoon Garden City Shopping complex. The centre management have every reason to be proud of the result. Our most artistic member, Mr. Hal. Smith, demonstrated his ample talents in the fields of construction, lighting, and display layout.

Under the capable guidance of Show Marshal, Mr. Jim Bayliss, setting-up proceeded smoothly and without confusion.

The Champion's Blue Ribbon went to Mr. George Marshall for his beautiful *Paphiopedilum* Honey Plume 'Halo' FCC/RHS, a yellow of good form which could win in any company. Reserve went to last year's champion, *P.* Welsh Rose 'Lesley' owned by Mr. Roy Brown. Best Cattleya was *C.* Joan Marie Sheltran x *C.* Ada Cochron, a dazzling white, tabled by Mr. Alex Johnson.

Australian Orchid Council Award went to Mr. and Mrs. K. Rex for their beautiful island display of orchids and foliage plants. This exhibit was greatly admired by all who saw it.

Mr. and Mrs. W. Ulrick took double honours in the Novice section, first with a large and colourful *Blc.* Patricia Purves, and again with a nicely flowered and well grown *Paphiopedilum ansum.*

A delight of the Show was the large number of West Australian terrestrial orchids exhibited, indicating an increasing interest by growers in these fantastic beauties.

This was our best ever Winter Show because hard working and efficient members made it that way. We thank them for their fine efforts. With individual spirit plus teamwork like this the Orchid Society of W.A. must go from strength to strength.

100 *Spring Road, Thamlie, W.A.*

CAIRNS SHOW CHAMPION OUTSTANDING

The Cairns paper devoted a deal of space to events at the Cairns Annual Show in July last. There was quite a bit on the orchid section. The first three paragraphs of this report are quoted:—

"Judge of the Cairns Show orchid exhibits, Mr. S. J. Balma of Innisfail, enthused over the champion entry yesterday.

"The champion was a phalaenopsis entered by Mr. K. McFarlane of Cairns.

"'That plant, if sent down south would receive an AM (Award of Merit)', Mr. Balma said."

Unfortunately, the reporter overlooked the minor detail of the name of the plant.

W.A. Winter Show Champion



Paphiopedilum Honey Plume 'Halo' FCC/RHS.

Owned by Mr. George Marshall, life member and immediate past president of the Orchid Society of W.A.

George has been showing paphiopedilums for many years in W.A. and has been "pipped" for champ. on numerous occasions, but at last he has come up with the unbeatable. Congratulations, George, on the breakthrough!

Paph. Honey Plume 'Halo' FCC/RHS received its award in 1970 and won the Moore Medal for best paph. the same year.

A PICNIC DAY SHOW

If you live within a few days' drive of the Blue Mountains of N.S.W. then make Saturday, the 22nd September, or Sunday 23rd, a day to remember. If you aren't tied up with the O.S. of N.S.W. Show on the Saturday, or dashing off to the Adelaide Conference on the Sunday, then make a visit to the Blue Mountains O.S. Spring Show. It is being held in the picnic atmosphere of Mr. Roy Deane's Greenacre Orchid Farm at Valley Heights. Right on the main Western Highway. See wonderful orchids, Greenacres at its best, and the Blue Mountains in Springtime. There'll be morning and afternoon teas, a continuous barbecue and fun and games for the kids.

Meet old friends and make new friends in the unpolluted Blue Mountains. The Blaxland-Springwood Rotary Club sponsors the Show so your presence will help them to help others less fortunate than ourselves.

Winter Show — Orchid Club of South Australia



A good number of entries filled the benches at this show, but more notable than quantity was the very high quality of the principal class winners. Champion of the Show and also Champion Paphiopedilum and Best Yellow or Green Paphiopedilum was P. Betty Bracey 'Springtime', exhibited by Adelaide Orchids. The medium-sized flower was beautifully fresh and clean and had a glistening white dorsal, bright green in the centre and bright green petals, ventral sepal and pouch.



A group of some of the Paphiopedilum class winners includes, from left to right: 1) F. C. Puddle, exhibitors J. & A. Hofner — Best White (This plant carried four excellent flowers); 2) Maudiae 'Coloratum', exhibited by A. McAllan — Best Maudiae type; 3) Betty Bracey 'Springtime'— described above; 4) Pothos x Wendbourne, exhibited by A. McAllan — Best Red; 5) Pacific Ocean 'Anne', shown by Adelaide Orchids — Best Spotted. (The above was a majestic flower of over seven inches across).



Best Cymbidium, exhibited by Mr. Bernie Hansen, was a fine flowering of the well-known *C.* Lunagrad 'Elanora', which carried sixteen excellent flowers on an arching spike as compared with the eight or ten we more often see.



Best Cattleya was Mr. Bill White's *Slc.* Falcon 'Alexandiri', a little gem of brilliant red colour.

Best First Generation Miniature Cymbidium was a fine specimen plant of *C. pumilum* 'album' x (Erica Sander x Shina Black), exhibited by Alf Smith. This bright green miniature was almost smothered in flowers, and made a very attractive sight.

One more exhibit which deserves special mention was the Best Seedling Cymbidium. This was *C.* Sleeping Valley 'Extravaganza', exhibited by Valley Orchids, and is one to watch for in the future. General colouration is an even green shade with a wide petalled well filled-in large flower and a bold, crimson marked lip. This could become one of the outstanding early varieties.

VICTORIAN ORCHID CLUB

Winter Show

The 1973 Winter Show of the V.O.C. was held at the Doncaster Shopping Town from Monday, 2nd July, to Friday, 6th, inclusive. In spite of a last-minute change in show dates, due to an urgent commitment by the Shopping Town management, the Show went smoothly.

The Affiliated Societies competed for the E. C. Eckersley Memorial Award, and the honour of winning it for the first time went to the Warringal O.S., Melbourne Eastern O.S. came second, and Mornington Peninsula O.S. third.

Champion of the Show was a *Vandanthe* cross: *Vanda* Lakapu x *Euanthe sanderana* (syn. *V. sanderiana*. Yes, the "i" has been dropped—it's not a misprint).

The A.O.C. prize for most pre-eminent entry went to a natural cattleya cross exhibited by Mr. N. Lock, namely *Cattleya* x *guatemalensis,* which is a natural hybrid between *C. aurantiaca* and *C. skinneri.* The plant had numerous 2" wide flowers, more or less orange-yellow flushed with bright rose.

Champion paphiopedilum was Mr. R. Murray's as yet unnamed cross, *P.* Lockinge x *P.* Baroque, a seedling of undoubted promise. Mr. R. Smith won the class for the best collection of paphiopedilums.

SPARKLING GEM OF A NAME

Remember, in the June issue, Mr. Herb Foote's delightful little pink cross between *Rhynchostylis retusa* and *Sarcochilus hartmannii*? Remember Herb saying, "I wish it had a short name!"

Well, it now has. Turn back to page 88 of the June issue just to refresh your memory and feast your eyes.

The cross was made by Mr. Bruce Chick of Murwillumbah some eight years ago and he graciously gave pods to Mr. Bill Murdoch of Coal Point and Bill and Jean Cannons of Port Macquarie.

Mr. Chick has applied for registration of this first ever inter-generic cross between *Rhynchostylis* and *Sarcochilus* and the name submitted is: *Sarcorhyncos* Blue Nob. That's easier to say, Herb!

The Sarcochilus used is the fine form from Blue Knob up above Murwillumbah. Congratulations, Mr. Chick, on this interesting breakthrough in breeding small vandaceous orchids.

TROPICAL QUEENSLAND ORCHID COUNCIL

Bright Conference at Mackay

Members from affiliated North Queensland Orchid Societies journeyed to Mackay for the Annual Conference of the Tropical Orchid Council during Queen's Birthday holiday weekend.

The Conference was opened by the Mayor of Mackay, Ald. Abbott, at the Dinner held on the Saturday evening. The evening's programme included a film on "The Great Barrier Reef", slides showing "Orchids grown in Mt. Isa", and a lecture on "Trials and Tribulations of Hybridising" by Mr. Willersdorf.

Leading Mackay growers opened their bush houses for inspection on Sunday, and visitors saw many interesting plants and methods of culture. The day concluded with a barbecue at the residence of Mr. and Mrs. J. Allenby and the showing of slides by Mr. Frank Slattery of Sydney. Mr. Slattery has long been Patron of the Council and journeys north with Mrs. Slattery each year for the Conference. Besides delegates from member societies there were five visitors from Adelaide.

At the Conference Show, the Championship was awarded to a lovely cross between *Ascocenda* Yip Sum Wah and *Vanda coerulea* owned by Mr. B. Ross. The judges awarded this plant a T.Q.O.C. Highly Commended Certificate. Other prize winners were Mrs. R. Lassen (*Vanda* Ellen Noa), Mr. V. Treloar (*Cattleya* Bogatta) and Mr. T. Kapcelovich (*Angraecum* and *Oncidium*).

Mackay Orchid Society Study Group was Host Society.

The next meeting of the T.Q.O.C. is to be held on the 27th of October in Townsville.

ANTS IN YOUR POTS

—Victorian O.C. Bulletin

The normal method of disposing of ants is to spray Dieldrin around the bottom of the pots and on the benches. Care must be taken not to spray flower spikes. When nests are in the pots a surface spray is likely to have little effect and the only sure treatments are to repot, or if you are adventurous, to dunk the whole pot in a Dieldrin solution. Skin contact with the Dieldrin must be avoided. Dunking has worked well with softcane dendrobiums but with other genera try its effect on one or two plants first before proceeding to treat them all.

A novel treatment is to make up a mixture of honey and plaster. Spread this around and any insect that eats it very quickly gets bound up. There are commercial preparations in powder form which can be poured around ant holes and ant tracks.

Something is brewing at McBean's

RUSSELL MARTIN



New house at McBean's, housing 35,000 Odontoglossums from Charlesworths

Photo: Russell Martin

A recent marked interest in the growing of Odontoglossums and allied genera has been matched only by the difficulty of obtaining seedlings. When the famous Charlesworth establishment sold all its stock to McBean's many Australians looked to the opportunity of buying stock from McBean's Australian offshoot but after eighteen months nothing seemed like eventuating. In the last issue, knowing that Mr. Russell Martin of McBean's Australia was in England, we asked the question, "Is something brewing at McBean's?" Here is the answer, and because it is of historical interest as well as containing news of importance to those interested in this alliance, it is published just as received from Mr. Martin.

The Editor,

In reply to your paragraph "Is Something Brewing at McBean's"—June 1973, you will no doubt be interested to learn of my observations and findings during my overseas trip, in connection with Charlesworth & Co.

It is a very sad occurrence to see large establishments degenerate, as the executive body ages and lose their driving force. Such is the case with so many well known orchid establishments which have closed their doors, to remain only a shadow of their former greatness. However, a number of brightly shining stars, with youth and vigour as their motivating force, are carrying on the good work and keeping the Great names alive. So it is with the new Charlesworth & Co., who through the energetic efforts of Ray Bilton of McBean's Orchids Limited, is restoring the greatness of Charlesworth in the Odontoglossum field, which was rapidly sinking into oblivion.

Sadness overtakes one on approaching Charlesworth's once impressive iron gates and entrance to the world famous orchid nursery, which is now closed and locked for the last time. It is a shame to see this impressive iron work rusting with neglect and grass growing up through the once well-kept lawn area, and weeds and moss already covering the long gravel drive. One senses a feeling of compassion and loneliness on peering through the solid gates, to see the old stately glasshouses falling apart through neglect, and it is hard to believe that this was the centre of the once thriving world-renowned Odontoglossum establishment.

The remaining five acres was sold for a substantial amount (into the six figure bracket) for land development, and the entire orchid stock was bought by McBean's Orchids Limi-



A section of plants in flower at McBean's from Charlesworth stock

Photo: Russell Martin

ted, with an undertaking to remove this stock to new premises in a specified time.

Ray Bilton was faced with almost unsurmountable tasks in constructing a new glasshouse at Cooksbridge, to house Charlesworth's collection. During this building period, he was faced with the problem of maintaining the collection in their houses at Haywards Heath, Sussex (the nurseries being situated some ten miles apart). Errors in construction by experienced builders, plus industrial problems which caused long delays, greatly extended its time of completion. All these delays had a detrimental effect on the stock. However, eventually the transfer and repotting of stock was effected into this new house at Cooksbridge.

During my visitation in May, I was able to see at first hand, the newly completed glass house of 100' x 125' which accommodates the entire Charlesworth stock. This house embodies all of the latest aids to plant growth and is fitted with automatic vents running the full length of the roof and the full length of one side. The opposite side wall is fitted with a series of exhaust fans, again automatically operated. The house is also heated with two independent automatic systems, as an insurance against failure or power stoppages. The entire house is watered by an automatic trickle system, which embraces a micro-tube fitted into each and every pot. There are at present 35,000 Odontoglossums and Allied Genera comfortably housed in their new surroundings. All are in a new type of mixture and show every indication of rapid recovery from their almost tragic ordeal during their latter years.

Cultural methods and growing conditions have been altered completely and this house is subjecting them to more light, which in turn is reflected in the leaf growth and colour. These new cultural methods have been responsible for the production of long strong racemes of flowers, with twelve to twenty flowers on seedlings flowering for the first time and there is much evidence of increased bulb size by these new methods and environment.

A practical demonstration of an automatic potting machine used for the handling of these plants, was most interesting and with three operators, it was possible to handle 1,000 plants per hour.

With the rapid recovery of this very valuable stock, the importation into Australia is now being thoroughly investigated and a "trial" shipment of seedlings will shortly arrive and be subjected to the newly introduced Quarantine Regulations. This will enable a thorough assessment of damage, if any, which can be expected with importations of Odontoglossums and Allied Genera, in the future. Once assessment has been made of this initial shipment, the doorway will be open for the importation of larger quantities, to satisfy the needs of the Australian orchid growers.

I have included a number of slides, showing

the new glasshouses especially erected to house the entire Charlesworth collection, together with views of the stock at present, and a number of plants in flower during the Third European Orchid Conference Show.

It is interesting to note that this progress has taken place in just over twelve months, for it was March 1972 when the transfer from Haywards Heath to the newly constructed house at Cooksbridge, took place. One could confidently predict that many seedlings of award standard, will be flowered and exhibited in the foreseeable future.

News just received relates that Charlesworth plants have received three Awards of Merit from the R.H.S. in the past twenty months—the two latest awards being gained in June 1973.

Vuylstakeara Elkara, 'Cooksbridge' AM/RHS. A very dark velvety red with very few markings.

Odontioda Brocade, 'Cooksbridge' AM/RHS. An attractive mauve patterned type, of very good confirmation.

It is interesting to note that this is as many as the old Charlesworth Company obtained in the preceding four years.

I have taken a number of very interesting slides pertaining to Miniature Cymbidiums viewed at both Paul Gripp's Santa Barbara establishment and McBean's and when time permits I will forward an article embracing this genera.

256 *Jasper Road, McKinnon, Vic.*

GOT US$7000 TO SPARE FOR A PAPH.?

— A. Mitchell in *Ku-ring-gai O.A. Bulletin*

In a talk at this Society, Mr. Bob Deane showed slides of two rare species of paphiopedilums, namely *P. boxalli* and *P. hookerae* for which American orchid growers pay US$700 and US$7,000 respectively for plants if they can be obtained.

P. boxalli is a green strap-leafed species from Tongu and Moulmein in Burma. It is superficially close to *P. villosum* which also comes from Moulmein. The dorsal is greenish, heavily spotted with dark purple and with a white border. Petals are yellow-green with maroon vein. The labellum is also yellow-green but it is tinged with dark purple. All segments have a waxy gloss.

P. hookerae is a darkly mottled species from Borneo. The foliage is almost "lividly" tessellated and worth growing for this alone. The dorsal is yellowish-white with a green flush on the lower half. The twisted petals are green with purple spots and edges, and the lip is maroon, flushed with green. This is one of the so-called "knife-petalled" slippers.

Mr. Deane has *P. boxalli* in his collection and says he would very much like to (who would not at US$7,000) obtain a plant of *P. hookerae.*

VICTORIAN ORCHID CLUB

Celebrating 50 years

On the night of May 7, 1923, thirteen people met at the home of Mr. David Chandler in Tooronga Road, East Malvern, to discuss the forming of an orchid club. A few weeks later the first meeting of the Victorian Orchid Club was held in the Independent Church Hall. Mr. Edgar Johnson became the first President, and Mr. David Chandler the Club's honorary secretary.

This is now the Victorian Orchid Club's Golden Anniversary Year, and the Club is Australia's oldest organised orchid body.

In fifty years the Victorian Orchid Club has contributed greatly to the cultural life of Melbourne. It has organised outstanding orchid Shows, raised large sums for charity, and assisted thousands of people to gain pleasure and a sense of achievement from the growing of orchids.

To-day there are just on a hundred orchid societies in Australia. Queensland formed the next Society a few years after Victoria, followed by New South Wales in 1933. *In* 1960 *all the State bodies grouped to form the Australian Orchid Council with the object of unifying judging, establishing national awards, promoting entertaining and educational programmes for societies, initiating national orchid conferences, and co-ordinating any other orchid projects of an Australia-wide nature.*

The Victorian Orchid Club outrode the vicissitudes of the depression, but during the rigours of the war years was forced into suspension when the Japanese threat became overbearing. Meetings started up again in March, 1944, and with members returning from the war backed by new members seeking the tranquillities of horticulture, the Club grew. Members have contributed substantially to the well-being of other growers all over Australia, both by interstate visiting and through the Australian Orchid Council. In turn orchid growers visiting Melbourne have always been royally entertained by members of the Victorian Orchid Club.

In fifty years the V.O.C. has established a tradition of service to its members, the community, and to the orchid growers of Australia.

All orchid growers will want to join in wishing President Russell Martin and members of the Victorian Orchid Club a bountiful Golden Anniversary year, and increasingly successful years ahead. —R. K.

Third Australian Orchid Conference

Registrations indicate that this will be the best attended Australian Conference ever. The South Australian Hosts are determined it will be the most memorable.

Grand Champion of the Show will receive $200, a prize donated by Jayhurst Orchids. Glasshouse Pty. Ltd. have given $252 for Champion Cymbidium, and the Shell Company $75 for Best Other Orchid. For the Best Pure Colour Cymbidium (containing no red pigment) Valley Orchids have donated $100, and the South Coast Orchid Club are generously giving $75 for Champion Native. In all, there is $1,900 in prize-money, a Gold Medal, a Silver Medal and nine Bronze Medals.

Theme for the Show is "Colonial Australia" and because the South Australian Orchid Club members are highly experienced at display, and they have the resources of John Martin's store display personnel to assist them, you can depend on it being worth a trip to Adelaide to see this feature alone.

One day will be devoted to 16 lectures on all aspects of orchid growing by speakers from all States, and two papers from overseas growers. Some of the speakers, such as Mr. K. MacFarlane of Cairns and Mrs. Andree Millar of Papua/New Guinea, are recognised as world authorities on their orchid subjects.

The social side has been expertly organised and registrants wil go on special tours, attend a dinner, and see leading collections. Lots of other things too, such as wine tasting.

If you haven't registered, you can still hop on a plane and take pot luck on fitting in. The Adelaide folk are so hospitable they'll fit you in somehow and ensure you an experience you'll always remember. Send enquiries (or a telegram saying you're coming) to Mr. C. K. Yates, Honorary Secretary, Third Australian Orchid Conference, 452 Seaview Road, Henley Beach, S.A. 5022.

PROCEEDINGS OF SIXTH WORLD ORCHID CONFERENCE

The Orchid Society of N.S.W. has recently sent complimentary copies of this fine book to its Affiliates for use in their libraries. Copies are still available for private buyers and may be obtained by sending $8.00 to The Secretary, Orchid Society of N.S.W., 31 Bambara Crescent, Beecroft, N.S.W. 2119. Overseas enquirers please note that price is in Australian dollars. This book is an important summary of modern scientific and cultural knowledge on the Orchidaceae. It is nearly out of print.

More Shows of '73

Due to such reasons as awaiting confirmation of hall bookings, some Societies were unable to notify show dates in time for the last issue. Jot those dates which concern you in your diary now.

N.S.W.

Belmont-Swansea District Orchid Society. SPRING SHOW. R.S.L. Hall, Bridge Street, Swansea. Friday, 7th September, 1.30 to 9.30 p.m.; Saturday, 8th September, 10 a.m. to 9.30 p.m.; Sunday, 9th September, 10.30 a.m. to 5.30 p.m. Hon. Sec.: Mr. T. Price, 247 Pacific Highway, Swansea. Phone 711-321.

Grafton District Orchid Society. SPRING SHOW. "Occupied with Orchids". Diocesan Centre, Victoria Street, Grafton. Friday, 14th September, 2 to 9 p.m.; Saturday, 15th September, 9 a.m. to 9 p.m.; Sunday, 16th September, Noon to 9 p.m. Hon. Sec.: Mr. Noel Skennar, River Road, Great Marlow 2460 (P.O. Box 351). Phone 42-3813 (Gtn.).

QUEENSLAND

Rockhampton Orchid Society. SPRING SHOW. Northside Plaza, North Rockhampton. Thursday, 13th September, 8.30 a.m. to 5.30 p.m.; Friday, 14th September, 8.30 a.m. to 9 p.m.; Saturday, 15th September, 8.30 to Noon. Hon. Sec.: Mr. T. S. Dean, 270 Clanfield Street, North Rockhampton. Phone 28-2278.

SOUTH AUSTRALIA

Port Lincoln Orchid Society. ANNUAL SPRING SHOW. It is anticipated that the Spring Show will take place on Friday and Saturday, 13th and 14th October. For details contact the Hon. Sec., Mr. R. J. Flavel, 6 Marine Avenue, Port Lincoln 5606.

South Coast Orchid Club of S.A. SPRING SHOW. Marion Shopping Centre, Diagonal Road, Oaklands Park. Sunday, 30th September, 2 p.m. to 5 p.m., the normal shopping hours until Saturday, 6th October, plus Wednesday and Friday nights. Members only Show. $1,000 prize-money and $500 lottery. Follows immediately after Third Australian Orchid Conference Show: registrants please note. Hon. Sec.: Mr. Peter Summers, 26 Truscott Avenue, Seacombe Heights, S.A. 5047. Phone 98-2461.

WHEN TO FERTILIZE

— Norm Edwards in *Blue Mountains and District O.S. Bulletin*

Someone asked me the other day whether I was regular with applications of fertilizers and how regularity could be ensured. I replied that I thought I was pretty regular but that I didn't keep any records. I have adopted a very simple way of timing my fertilizing: I fertilize at the beginning of the month — the first, second or third if I can and then in the middle of the month — say the 15th. You won't get very far out this way.

By the way, it's a good idea to vary the diet you are offering your plants. If you use two or three different fertilizers, it will probably be necessary to keep a written record. If you don't want to do that, then apply the fertilizers at about half the strength recommended and not much harm will come of whatever you do.

SOCIETY WISDOM

PHALAENOPSIS — FROM FLASK TO FLOWERING

—John Beale in *Q.O.S. Bulletin*

On deflasking the plants are grown in a moist medium under heavy shade with warmth and fresh air.

These small plants are treated with a mixture of 1 teaspoon of Captan, Benlate and fertiliser. This is applied twice daily for three days and then once per day until the plants are showing strong growth.

Phalaenopsis like plenty of shade and my house is constructed so that the plants get maximum shade during the middle of the day. They are grown on a bed of wet sand at ground level. This bed is treated with slug and snail bait. Sliding windows at ground level allow fresh air to circulate around the pots thus lifting the warm moist air up around the leaves.

The house is heated electrically and during winter thermostatic control keeps the temperature not below 65 deg. F.

All plants are fertilised at least once per week during summer and winter alike, are watered heavily once per week and misted every morning except on wet and cloudy days.

I have tried several potting mixtures including all barks, charcoal and cymbidium mix. Under my conditions however I have found the the best results are obtained with a mix of 30% crushed tree fern and 70% crushed granite—about pea size. Each component has some nutritional value—the tree fern provides some acid and the granite potash and trace elements.

I have found it good policy to overpot phalaenopsis as this seems to encourage root growth in the pot rather than outside it. I repot any time during the year provided new roots are showing.

CULTIVATION OF CYMBIDIUM SUAVE.

— D. Carnegie in *Queensland Native Orchid Bulletin*

Of our three indigenous Cymbidiums, I have found *Cymbidium suave* the most difficult to grow successfully. However, with its fragrance and golden green blooms, it is most rewarding and well worth the extra care and trouble required. Having really battled with it until recently, I have picked up a few points. (I think it's given me more hiccups than any other orchid I've grown).

Firstly, it hates root disturbance. If and when you collect, shift or repot, do so only in July/August.

Secondly, the container. Having grown and lost plants with monotonous regularity, I felt that the potting was at fault. We know that in its natural state, the plant's roots can grow down the hollow centre of a dead tree, for up to 30' (10 m). I, therefore, was pleased to receive a good tip from Bob and Kath Unsworth, two keen native growers from Cleveland. Making up a basket approximately 18" (45 cm) deep by 6" (15 cm) on all four sides using ½" (01.3 cm) wire mesh, I lined it with elkhorn peat, and filled it with a compost of half standard cymbidium compost, quarter charcoal, quarter of the red rubble from hollow trees, plus Mag-Amp fertilizer.

Now for the key point. When roots start to emerge from the bottom, make up a second basket, same size, same shape. Fill it with compost and wire it to the bottom of the first, and you're in business. (I don't know what happens in ten years time, though). My plant already has five new leads, and really looks good.

Thirdly, and finally, concerns shade. Keep it in fairly heavy shade until well established, and then approximately 50% shade during summer . . . full sun in winter. Eminent advice notwithstanding, do keep it lightly moist. When I first tried to grow *Cymbidium suave,* several experienced growers told me to "Stick it up high, and forget the hose". I did, but with dire results.

To wind up: when the buds first show, shift into heavy shade to get that nice, clear green.

Dendrodium Ostrinoglossum

— Cam Basey in *Tan Bark*

In the March issue of the "A.O.R." there is a splendid picture of *Dendrodium ostrinoglossum*. The caption reads — "A minimum night temperature of 65°F. is necessary to grow this Orchid". This remark caused us no little surprise.

In our glasshouse, which is (inadequately) heated by electricity, winter night temperatures can occasionally go down to 43°F. and frequently hit the low 50s. We have a seedling *D. ostrinoglossum* which has successfully survived the last two winters and is a bonny little plant — each year increasing

the length of its pseudo bulbs. We also have a number of *D. ostrinoglossum* hybrids — *D. ostrinoglossum* x D. May Neal, *D. ostrinoglossum* x D. 'Green Antelope', *D. ostrinoglossum* x Ursula, etc. In the case of the hybrids, the other parents could give a tolerance to cold and perhaps this explains their lush growth and flowering.

All the antelope types we have are hung as high as possible where they get maximum light. The glasshouse is lined with plastic and this above, without any paint on the glass, appears to prevent burning on the plants. Some of the mature plants have canes 3' to 4' in length and the best effort so far is five flower spikes on one pseudo bulb, but two to three spikes is more usual.

The antelopes grow all the year round, though winter growth is slower. This necessitates more water and humidity than that required by the hard canes naturally.

Perhaps readers may be tempted to try a few *D. ostrinoglossum* hybrids. Their form and colour are varied and most attractive and the flowers are long lasting but, believe me, they take up a lot of space.

Toowoomba Orchid Society

PHOTOGRAPHING PLANTS

A talk by Vin Drew as reported in the Mornington Peninsula OS. Bulletin

Mr. Drew did not attempt to make his talk technical by quoting "f" numbers, exposure times, fast or slow films. Most of us make mistakes with our photography, but apart from technical errors, we do not use enough variation in our picture taking, generally standing the same distance, and taking them from the same height in each case.

The best advice he could give was to try to get more of the subject that was being photographed into the slide, by getting closer to the subject, as many people stand too far away. Avoid including too much sky, eliminate the pot, and avoid other plants, as everybody knows what the sky looks like, and one pot is very similar to another, and, horror of horrors, the other plant may be of more interest to the viewer.

The aim should be to concentrate the viewer's attention onto the central attraction of the slide. Unfortunately, we cannot always pick the right time to capture the beauty of plants, but attempts should be made to avoid bright glaring sunlight, as this tends to give the subject harsh unnatural effects. Side lighting is probably the best to use as any shadows so formed may be eliminated by using white cardboard, aluminium covered cardboard, or mirrors.

Interesting effects can be obtained by rear lighting and overhead lighting, also flash can be used with good effect. When photographing single subjects, plain backgrounds should be used, preferably of a colour to enhance the subject being photographed. This, of course, is not always possible, so should gaps exist at the edges or the corners of the slide because the subject will not fill the slide, foliage from other plants can be used as background material to build out the gaps that may occur.

Although experts do not favour the use of supplementary lenses with a fixed lens camera, the use of supplementary lenses will give very good results as any distortion that may occur should be at the edges and corners of the slide.

Mr. Drew showed a selection of colour slides illustrating the points he had made. The showing of slides should also require careful preparation (no slides upside down, etc.), with variation of subject matter and the use of close-up shots to bring out colouring or specific features of the subject being illustrated.

Commentaries can be pre-recorded, leaving ample time to adjust focusing or change of slide. Mr. Drew showed a programme on the history of Melbourne's water supply, and its development over the years. A pre-recorded tape was used incorporating bird calls, sound of rushing water, bush noises and background music. This was extremely interesting and held the attention of all the members present, and thoroughly illustrated how absorbing a programme can be made with a little planning, a fixed lens camera and a tape recorder.

A MONDAY MORN AT SOMERSBY FALLS

— Fay Horrigan in ANOS Newcastle Group Bulletin

Feeling somewhat jaded with my lot and only fit to war at things that couldn't retaliate, I pushed off recently to an old friendly retreat at Somersby Falls. Fortunately, it was an overcast, bone chilling July morning and apart from a few well rugged rabbits, only the resident lyre birds were on view, poking around for their breakfasts. The previous week's substantial rainfall had turned the falls into an exciting sight; the surrounding mosses and funguses, various verdure and orchids were lush, fat and abundant. *Pterostylis nutans* was spread thickly on top of, down the sides of, and even clinging with only the minimum toe holds to extreme jagged edges of large rocks. *Bulbophyllum crassulifolium* completely covered a whole mess of 40 ft. trees and were only just previewing their first delicate yellow flowers. *Liparis reflexa* hung many sprays from the fairly unreachable cliff faces, however, the scars from looted plants were still rawly evident lower down.

Editor's Note. Somersby Falls are near Gosford, N.S.W., and the area is under consideration for Sydney's second major airport.

A MASSIVE FLORESCENCE

A mere 540 flowers — give or take two or three — may not seem a lot after our June issue colour illustration of *Oncidium flexuosum* with 5,600, but the 540 flowers were on a plant of Oncidium Harry Jensen, with each flower many times the size of an *O. flexuosum*. The plant is the proud possession of Nada Watts, a member of the Shoalhaven Orchid Society which centres on the N.S.W. south coast town of Nowra.

After three check counts 287 blooms were counted on one spike, and four other spikes on the plant carried a total of 253 flowers. The florescence took up too much volume to be safely transported to a Society meeting. How frustrating!

Unfortunately we do not have an illustration.

Cattleyas — The Queen of Orchids

PHYLLIS NICHOLAS

We all know that in this day and age Orchid growing is not only an interesting, rewarding and challenging hobby but also a relaxing hobby—and in Tasmania we mainly look to cymbidiums for that hobby.

Much has been said on the growing of the latter so today I intended to endeavour to give you a few hints on the growing of the most beautiful of all orchids — the cattleya.

In introducing you to cattleyas I won't, in the short time available to me, go into the background history of this genus but more to give you a few do's and don'ts re their culture.

Before you attempt to grow cattleyas you *MUST* assess your growing conditions such as minimum temperature, light, humidity, etc. As most cattleyas on the market today are derived from species found growing in the tropical regions of South America we realise from this they will need a little heat.

By reading up on the background you may find a hybrid that will have a resting period through our winter, therefore it would be safe to try that in the warmest spot in an unheated glasshouse if you have no heat at all.

It is very hard to lay down a hard and fast rule here—it is mainly by trial and error but we have found it is useless to endeavour to cultivate winter blooming plants unless you have more than mimum heat—you would need at least 60° otherwise your blooms take too long to open and develop sepal wilt.

Take it from me it can be very disappointing and discouraging to wait twelve months for a flower only to have that flower ruined before it has opened fully.

Any grower starting with cattleyas would be well advised to begin with bifoliates; perhaps with a *C. intermedia* background. These have smaller blooms but give more blooms per plant and will often flower twice a year. Once you have mastered these then branch out into the larger blooming types.

Once you have made your choice the next thing is what to pot them in. We prefer terra cotta pots as drainage is more easily controlled (and balance better when hung).

Potting a new plant or repotting an old one is much the same.

Osmunda fibre is still the best but practically unobtainable so we now use a mixture of radiata pine bark, scrapings from around the base of old tree ferns or myrtle leaf mould and a liberal amount of clean washed charcoal. They can also be grown in either straight bark or straight charcoal.

For repotting, water the plant a few days before so the compost is just damp.

To remove the plant from the pot endeavour to cut around the roots with a very sharp knife. It has been advocated that pots should be broken to save root damage but in many cases I have found roots suffer considerable bruising so now resort to the knife.

Trim off all dead roots and cut back broken ones to a break. Remove all old compost and the oldest part of the plant leaving at least four to five good canes. This part can be potted separately if any live eyes can be found at the base of the bulbs.

Prepare your pot—the size to be determined by allowing sufficient space for two years' growth. Enlarge the drainage hole and crock vertically to about $1\frac{1}{2}$ inches. Hold your plant with the oldest part nearest the edge of the pot, fill to within $\frac{1}{2}$ inch of the brim taking care to work the compost between the remaining roots. TAMP sharply to settle compost.

All cattleyas should be repotted every two years to keep the plants healthy and the ideal time is immediately after flowering, late winter or very early spring before the eye or new roots actually start as these can be damaged very easily.

Watering: Our watering program is twice a week through the summer and once a fortnight for the winter months. Each plant is looked at and dipped. NO overhead watering at all except foliage spray with the hose if the day promises to be hot and dry—but the glasshouse floor and benches are kept damp.

Fertilising: Our plants get two dunks in Formula 20 at weekly intervals to promote root growth after potting then alternate weekly dipping in 30-10-10 and Fish Emulsion—always water your plant first. We also sprinkle a small amount of Blood and Bone around the top of the pot in November and January.

ALL fertilising ceases when growths are made up.

Shading: Cattleyas need at least 64% shade or perhaps more depending on where you grow them. Under our conditions where we have the full force of the sun right until sunset we leave 52% Saran Cloth on all year and in August apply also a thin coat of white to the outside of the glass. This coat is not removed until May.

Cattleyas if hung from the roof suffer sunburn to their leaves very quickly under the fierce burning heat of our summer sun.

Finally let me say LEARN to master a few plants and then try branching out into the various hydrids and especially the multi-generic crosses, your Brassolaeliocattleya and Potinaras, etc., to give you some of the brilliant yellow and lovely reds we see in periodicals from time to time.

In quickly summing up what I have told you:—

Firstly: Assess your growing conditions,
Repot before roots and growth start,
Watch watering carefully—Remember when plants are hot they must have fluid — when cold — DRY — when in doubt DON'T WATER.

Kelvin Avenue, Moonah, Tasmania 7009

O.S. OF NOR' WESTERN TASMANIA

Mr. K. M. Byers in his Presidential report for 1972-73 reveals a busy and interesting year for members. Membership is now at a record figure of 70 with large attendances at meetings. The Club played a very active part at the Third Tasmanian Orchid Conference, and the Spring Show in the Town Hall was an outstanding success.

Activities included a barbeque and the first annual dinner, also an exhibit at the Spring Festival of the Tasmanian Orchid Society.

O.S. OF NOR' WEST TASMANIA SLIDE LIBRARY

This Society is starting a slide library as a record of the Society's Shows, member's exhibits, etc. as a running account of its history and personalities. Many societies already keep scrap books of newspaper clippings, photos, etc., and a few have appointed Official Historians. One society, the North Shore O.S. of Sydney, N.S.W. regularly reproduces in its Bulletin excerpts from its Bulletin of twenty-one years ago.

TASMANIAN ORCHID COUNCIL CONTEMPLATED

The O.S. of North Western Tasmania has suggested the formation of a Tasmanian Orchid Council to its parent body, the Tasmanian Orchid Society, and its sister Societies, the Launceston Orchid Society and the Devonport Orchid Society.

The Tasmanian societies have a long record of co-operation, evidenced by the fact that they have now held three Regional Conferences, all of which have been marked educational and social successes.

NEW GUINEA

Second International Show

The Papua/New Guinea Orchid Society will hold its second international orchid show in Port Moresby from 3rd to 5th May, 1974. The decision to stage the show was a result of the outstanding success of the first international show held in March, 1973. Many hundreds of entries attracted a crowd of thousands from all parts of Papua/New Guinea and overseas. Many special exhibits were forwarded by air from overseas. The champion exhibit of the show was a cut native flower, a magnificent specimen of *Dendrobium ostrinoglossum*, commonly known in Papua/New Guinea as the 'Sepik Blue'. Overseas visitors were amazed at the range and variety of species native to Papua/New Guinea and the 1974 show committee is taking steps to ensure that as many as possible of the thousands of varieties are on display at the 1974 International Show.

The programme for the 1974 show will include lectures by leading orchid growers, conducted collecting trips through the bushland and plantations around Port Moresby, a presentation dinner and several social events. A complete range of pre- and post-show tours has been arranged some of which include a once-in-a-lifetime visit to the spectacular Goroka Highlands Show, to be held in Goroka, 11th-12th May, 1974. This show is a gathering of the primitive Highlands tribes and occurs every two years.

The venue for the 1974 Orchid Show will be the University of Papua/New Guinea, where, under the care of Mrs. Andree Miller, exists the most representative collection of Papua/New Guinea orchids. Mrs. Miller, secretary of the Papua/New Guinea Orchid Society and world renowned collector and grower of orchids, will make her extensive collection at the University available for visits by show registrants.

Leading tour operators in Japan, Hong Kong, Philippines, Malaysia, Singapore, Thailand, United States, New Zealand and Australia have arranged special tours to Papua/New Guinea to co-incide with the staging of the 2nd International Show. Enquiries regarding these tours, registration forms, accommodation or details of the 1974 show programme, should be addressed to:

The Secretary,
2nd International Show Committee,
P.O. Box 7002, Boroko, PNG.

A PEEP AT WIDER WORLDS

COMPILED BY LAURIE DEANE AND RONALD KERR

BEAUTY IN MINIATURE

There must be a lot of Ascocendas around in various stages of successful culture or otherwise. Whenever you feel your plants stand in this scale, it would be profitable to read "Ascocendas Are A Joy to Grow" by Toy Len Chang. Practical and stimulating.
Hawaii Orchid Journal. December, 1972.

BIG FLEAS HAVE LITTLE FLEAS

—*American Flower & Garden*

Disease organisms smaller than a virus have been discovered in plants. U.S. Department of Agriculture scientists have isolated two new types of infectious particles, one in a potato tuber, the other in a chrysanthemum leaf. They are called viroids.

Dr. Theodor O. Diener, who announced finding the second or chrysanthemum viroid, said scientists now suspect viroids to be widespread in nature and responsible for many diseases of animals as well as plants.

Both viroids discovered thus far are described as "small strands of free ribonucleic acid", less than 1-80th the size of the smallest known virus and without the protective coat viruses have.

N.B. Acknowledgements to Illawarra O.S. Newsletter for first unearthing this item.

MONUMENT TO CONSERVATION

Rebecca Northen reports on *Dedication of the Lankester Garden,* in the June issue of English *Orchid Review,* page 180. The garden is a fantastic ecological area in Costa Rica built up as a private venture by the late Charles H. Lankester, famous naturalist and orchidologist. Through the American Orchid Society Mrs. Northen organised a fund to preserve the garden as a memorial to the late Mr. Lankester. Its botanical treasures are to be preserved under the control of the University of Costa Rica, with assistance from the Orchid Society of Costa Rica. Half the money required for acquisition of the property was provided by the Stanley Smith Trust. The late Mr. Stanley Smith was an Australian millionaire who in his lifetime, and since through the Trust, contributed vast sums to scientific projects. One such project (in conjunction with Mr. Hermon Slade and others) was the New Guinea Foundation devoted to research into tropical crops, and he also financed the publication of Mr. A. W. Dockrill's *Orchids of Australia.*

THAT OLD BLUE HEAVEN

Blue, as Ganesh Mani Pradhan says, is a rare colour in the Orchid World but from the east Indian State of Assam comes a magnificent azure blue orchid, *Vanda coerulea.* The author has given us a superb article "The Habitat and Growing Conditions of *Vanda coerulea* in Nature With Cultural Hints Gleaned Therefrom".
The Orchid Digest. May-June, 1973.

STAMP STAMP STAMP

Are you aware that 62 orchid stamps were released in 1972? Columbia issued a special one for the Seventh World Orchid Conference, which is more than Australia would do for the Sixth. Mr. S. J. Matatics lists them all in the June, 1973 *A.O.S. Bulletin,* page 492.

LIGHT ON TWO STANHOPEA SPECIES

Too little is seen of this genus in Australia, with the exception of *S. tigrina* and possibly *S. wardii,* and it is rare to get any articles in overseas orchid publications dealing with them. In the June, 1973 *A.O.S. Bulletin,* pages 510-515 Mr. Henry Teuscher describes in words and pictures the spectacular *S. eburnea* and *S. saccata.* Anyone know if an Australian nursery has them?

CARBON DIOXIDE — OR WHAT?

Everett Wilcox, well-known Paphio. grower, examines unusual cultural practices and reports some extraordinary results in "The E. W. Miller Collection" located in California. This will surely give any specialist grower something to think about.
The Paphiopedilum World. July, 1972.

WHITE IS BEAUTIFUL

Edna Ratcliffe (no further introduction necessary) writes, in a piece called 'The White Witch', of that wonderful *Paphiopedilum* F. C. Puddle FCC/RHS; she discusses crosses already registered using F.C.P. and many more to come in search of the perfect white. Exciting!
The Paphiopedilum World. January, 1973.

IT'S MORE OR LESS THE NATURAL THING TO DO

Changes have been made in methods of plant display at the Royal Botanic Gardens, Kew, England and as appears from the following extract, these changes have involved the well-known collection of orchids grown there — "Most tropical orchids are epiphytes, that is, they live on trees, not drawing nourishment from them but using their branches as aerial homes which are more exposed to light. Since living trees cannot easily be used in the glasshouses and dead natural trees decay very quickly, artificial trees are used. A new system of constructing these 'trees' has been developed using an outer layer of cork bark on an iron framework, with a dividing layer of polyurethane foam. This foam system ensures a solid but comparatively light 'tree' with branches formed by bending some of the framework rods out and away from the main stem. The light weight of the polyurethane allows long 'branches' to be drawn out. The finished 'tree' is ideal for growing epiphytic plants and should have a long life. Orchids are fixed by carefully wiring them to the bark and covering the roots with sphagnum."
Gardener's Chronicle. 27th April, 1973.

PIE IN THE VENEZUELA SKY

Thirty acres of land at altitude 4,000 feet may not sound exciting, but famous orchidist Mr. G. C. K. Dunsterville found it doubly so. First, the thirty acres is entirely surrounded by sheer cliffs which drop to an immense near sea level valley, giving it the appearance of a giant's index finger protruding out of the earth. Second, the thirty acres proved to have an astounding orchid population. How did Mr. Dunsterville get there? Helicopter of course. Read all about the *Orchids of Cerro Autana* in the May, 1973 *American Orchid* Society Bulletin, pages 388-401. Plenty of illustrations.

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SS188	Den. Compactum 'Hartleys' x Compactum 'Sunshine' (N.Q. species)	2" pot
SS198	Epidendrum Atropurpureum 'Roseum' x Self	2" pot
SS192	Angraecum Veitchii (Large cream blooms)	2" pot
SS149	Den. Diane McFarlane (see coloured plate A.O.R. Mar. '71 issue)	2" pot
SS116	Den. Maui Beauty x Dee Lynn (Dark, exhibition)	2" pot
JA66	Vanda Rothschildiana (Large blue)	2" pot
JA63	B.L.C. Sunset Bay (Red colouring)	2" pot
SS141	Phal. Zada x Barbara Beard AM/AOS (Pink)	2" and 3" sq. pot
SS118	Phal. Dos Pueblos AM/AOS x Scottie Maguire AM/AOS	2" pot
SS159	Phal. Daryl Beard HCC/AOS x Fuscata (Yellows)	2" pot
SS148	Den. Pale Face x White Egret (Full white)	2" pot
SS136	V. Mary Foster x Kamahele x Ascda. Meda Arnold 'Loretta' AM/HOS	2" pots

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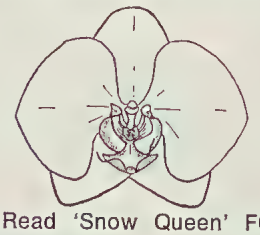
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There are nearly 100 orchid societies affiliated with one or more of the above State Societies. For the address of one close to you write to the Secretary of your state society. Advice on forming a society can be given if there is not one in your area.

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Australian Orchid Review

PUBLISHED QUARTERLY

Volume 38, No. 4 75 cents December, 1973



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See page 173 for Australian Orchid of the Year

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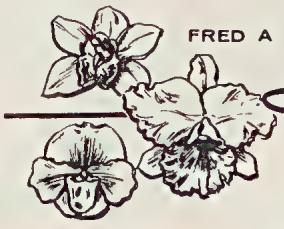
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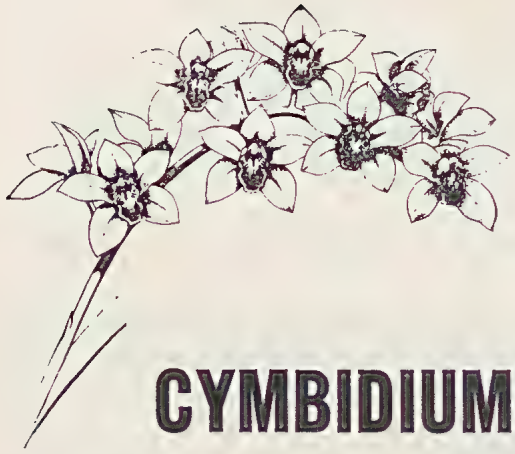
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This is possibly the finest Gareth to date, perfect shape, yellow/green flowers with a maroon overlay. Labellum white with crimson band and spotting.

Min. 198 **Show Girl (Fine Var.)**
Fine round pure white Show Girl, with a typical well marked labellum.

Min. 199 **Lois Grave (Fine Var.)**
Upright spike carrying twenty well shaped light red flowers, well displayed white lip, with a deep maroon band.

Min. 200 **Excalibur 'Glastonbury'**
Upright spike of fifteen flowers of well shaded pink, fine lip spotted crimson.

Min. 267 **Gawain 'Lewes' AM/RHS**
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C. ENID ALBA 'RIVERMONT' AM. AOS x BC. ANDERSON 'NORM TATOR' AM. AOS. — Semi-albas.
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Dendrobium Lipstick 'Debbie', HCC/AOC-QOS (colour) .... Cover

Orchid names: A species of orchids has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

Dendrobium Lipstick 'Debbie' is a dazzling cocktail of colourful breeding, being a hybrid mixture of *Phalaenanthe* and *Cerotobium* sections. The plant carried thirty blooms on a large arching spike. Parents of this cross are *D.* Aikotengun and *D.* Edith Pong. The cross is one of a series of outstanding matings made by Mr. Kevin McFarlane of Cairns.

Third Conference a Scintillating Affair

The nearly 500 participants in Australia's Third Orchid Conference carry indelible memories of experiences profound and gay allied to rich areas of close communication with interesting people.

Superbly impressive was the splendid organisation by our South Australian Hosts. Everything seemed to go as it should. Host Society meant not a collective, amorphous, and detached Orchid Club of South Australia but a team of individuals one or two of whom seemed to be on hand at an appropriate moment just to be nice. Major problems did not seem to occur — and that can only mean thorough advance planning.

The Conference Show, held in the John Martin Auditorium, demonstrated the power of a strong theme. It was centred, proudly, around South Australia's history, and the many displays, each with its own individuality, contributed to a powerful aesthetic unity.

Australia's finest orchids were concentrated there — the Grand Champion *Cymbidium* Ann Baxter 'Winifred Betty' being locally raised by Adelaide orchids. Queensland provided the Best Orchid other than Cymbidium in *Phalaenopsis* Caruso 'Juanita' x (Spring Showers x Alice Gloria) owned by Mr. Kevin McFarlane of Cairns.

Mr. McFarlane exhibited six different — and all magnificent — spikes from clones of the now famous *Dendrobium* Impact. This cross is now emerging as the finest of bicolor hardcanes.

The surfeit of aristocrats was overwhelming but the peasants exhibited Cinderella characteristics no less appealing. Foremost were the terrestrials in both West Australian and some South Australian exhibits. These included the vivid yellow *Caladenia flava,* the quaint and spidery *Caladenia dilatata,* and bluer than blue *Glossodia* major.

It was a week of stimulating richness. One remembers the friendliness of the smorgasbord in the John Martin Buttery; the night of Germanic revelry in the old Hansdorf Mill as a peak in gastronomic and social experience; the nice balance of formality and conviviality at the official banquet.

Vivid, too, were the lectures, for their practical value, and for their revelation of warm personalities. But the two women speakers stole the show: Andree Millar speaking on New Guinea orchids, and Georgina Ridge speaking on growing vandaceios orchids in North Queensland.

Throw in a day at the Barossa Valley with a marvellous lunch at Seppelts. Another on the historical south coast. Visits to the leading growers: Johnsons, Adelaide Orchids, Valley Orchids, and an all too short hour at the fantastically beautiful Fullston Farm. Plus a half day among the terrestrials in the Adelaide Hills — and I have a week without price to remember always.

See you at the Fourth in Sydney, commencing 14th September, 1975.

Ronald Kerr.

THIRD CONFERENCE SHOW

MAIN PRIZE WINNERS

Grand Champion of Show
Cymbidium Anne Baxter 'Winifred Betty'. Owner: Adelaide Orchids.

Best orchid other than Cymbidium
Phalaenopsis Caruso 'Juanita' x (Spring Showers x Alice Gloria). Owner: K. McFarlane.

Champion Cut Flower
Cymbidium Wallara 'Golden Ball'. Owner: Ray Dean.

Reserve Champion Cymbidium
Cymbidium Harry Shepherd 'The Prize'. Owner: B. Hansen.

Reserve Champion Cymbidium Cut Flower
Cymbidium Anne Baxter 'Winifred Betty'. Owner: W. M. Hughes.

Best Pure Colour Cymbidium
Cymbidium Pharoah 'Almighty'. Owner: Valley Orchids. The prize money for this class was donated by Valley Orchids and it has now been re-donated for the same class at the Fourth Conference in 1975.

Best Paphiopedilum
Paphiopedilum Colonist 'Wellington'. Owner: S. Condon.

Best Cattleya
Brassolaeliocattleya Sylvia Fry 'Karandra'. Owner: N. Goudie.

Most outstanding Interstate Exhibits
Gold Medal to McBean's Orchids (Aust.) Pty. Ltd., Victoria.
Silver Medal to Wayside Orchids, N.S.W.
Bronze Medals: Papua New Guinea Orchid Society, Mackay and District Orchid Society, The Orchid Society of N.S.W. Ltd., Victorian Orchid Club.



Third Australian Orchid Conference

Above: Four views of the Conference Show. In the top two the Orchid Society of N.S.W. exhibit is in the foreground. Scenes of the old colonial days established the theme "Orchids Colonial Style" and soft background music of old Australian ballads established the mood. Effective lighting showed the orchids to advantage.
Bottom left: Conference lectures were well attended, and full of interest.

A TIME TO REMEMBER

Fourth Australian Orchid Conference time! Show setting up day is 14th September, 1975. You'll have a wonderful week. Sydney has more of everything for everyone. Start organising your holidays now. Write for details to Orchid Society of N.S.W., 31 Bambara Crescent, N.S.W. 2119.

COMING IN 1974

Fourth Tasmanian Orchid Conference

At Devonport. Write to the Hon. Secretary Tasmanian Orchid Society, 54 Kellatie Road, Rosny for details.

Second N.S.W. Regional Conference

At Newcastle over October holiday week-end. See March issue for further information, or write the Hon. Secretary, Newcastle Orchid Society, 17 Stanley Street, Merewether 2291.

A.O.C. ANNUAL MEETING

AUSTRALIA'S ORCHID PARLIAMENT

Representatives from all Australian States devoted a day at the Third Australian Orchid Conference to discussing matters of concern to the orchid growers of Australia.

After the President, Mr. James Mackinney, had reported upon a year of successful activities, Officers were elected for the ensuing year. The only changes this year were in the posts of Registrar-General, now held by Mr. Athol Bell of N.S.W., and Conservation Chairman — now Mr. G. Hunter of Queensland.

After expressing thanks to the retiring officers, Mr. Russell Martin and Mr. John Evans, the meeting proceeded to general business.

Considerable time was devoted to judging matters. It was decided that the Orchid Society of N.S.W. and the Australian Native Orchid Society are to prepare details for a re-circulating Medallion for Australian Native Hybrid of the Year. The plan is to encourage native breeding as a memorial to the late Mr. I. Butler.

A select committee was appointed to study the question of plant breeders' rights. Some overseas countries give patent protection to new hybridisings and some nurserymen's organisations in Australia are seeking the same protection in Australia.

Mr. Gerald McCraith of Victoria initiated discussion on the feasibility of establishing an orchid garden as a conservation and educational project somewhere in Australia. A committee was appointed to study this and report to the next Annual Meeting.

ORCHID OF THE YEAR

The result of the voting for Australian Orchid of the Year was announced at the Australian Orchid Council meeting. The winning plant, *Phalaenopsis* Hermosa 'Eileen' is pictured opposite and described in the list of A.O.C. Awards. The runner-up, Paphiopedilum Lyric 'Northbridge' is also pictured opposite, and a particularly photogenic A.O.C. Award winner, Dendrobium Lipstick 'Debbie', is on the front cover.

A.O.C. AWARDS FOR 1972-73

Only six plants were awarded in the year ended 30th June, indicative of the high standard which must be attained, and each owner can well be proud of his achievement.

102 *Paphiopedilum* Welsh Rose 'Leslie', HCC/AOC-OSWA.
One well shaped bloom of good substance and texture on a high and straight stem. Colour was attractive, the dorsal an erythrite red splashed with dahlia purple and edged with white. Petals a garnet brown and dahlia red edged with green. Size 80 mm (3¼") across the dorsal. Owner: Mr. R. D. Brown.

103 *Paphiopedilum* Lyric 'Northbridge', HCC/AOC-OSNSW.
One flower on a strong straight stem carried above foliage. The dorsal a magenta red edged with white. Petals a beetroot purple. Dorsal 85 mm (3½") wide.
Owner: Mr. R. Trenerry.

104 *Cymbidium* Sensation 'Royal', AD/AOC-VOC.
The strong raceme had eleven flowers of intense colouring, Segments were a greyed purple, and the lip white with a heavy band of red-purple. Width 95 mm across petals. Owner: Mr. R. A. Smith.

105 *Paphiopedilum hirsutissimum* 'Purple Robe', AD/AOC-OCSA.
Notable for above average size of the flower, and distinctive colouring of cyclamen purple shading to green at the axis, with brown spotting of the individual segments. Owner: Mr. N. Zurcher.

106 *Dendrobium* Lipstick 'Debbie', HCC/AOC-QOS.
Thirty typical well shaped blooms of exceptional quality on strong arching spike. Sepals yellow-green, labellum and side lobes a pansy purple. The raised area along centre of labellum a beetroot purple, with the column citron-green. Owner: Mr. K. McFarlane. (Pictured on cover).

107 *Phalaenopsis* Hermosa 'Eileen', HCC/AOC-QOS.
A spray of eleven well shaped blooms on a graceful arching stem. Each flower pure white with yellow in the lip. Owner: Mr. R. Ashburn.

A.O.C. Orchid of the Year



Phalaenopsis
Hermosa 'Eileen',
HCC/AOC-QOS.

This picture speaks for this fine plant better than any description. Note the shapely roundness and even spacing of the flowers. The firm texture is apparent. Owned by Mr. R. Ashburn of Brisbane.



Runner up:

Paphiopedilum
Lyric 'Northbridge',
HCC/AOC-OSNSW.

Mr. R. Trenerry was unlucky to have his magnificently grown paphiopedilum beaten for Australian Orchid of the Year. It is a plant to be watched for at future winter shows. Owner: Mr. R. Trenerry.

NATIONAL ORCHID COLLECTION PROJECT

Australian Orchid Council approves feasibility study

The Australian Orchid Council has appointed a select committee of three to examine the feasibility of establishing a National Orchid Collection. The move arose from a submission to the Council by Mr. Gerald McCraith of Melbourne, this, in turn, being prompted by discussions with Mr. Hermon Slade of Port Morseby and Sydney.

In his submission Mr. McCraith said: "After several letters from Mr. Hermon Slade this proposal has captured my imagination, for I believe we have everything required for its creation . . . I see in it a National Project that could become a reality of great importance . . . There are many details and avenues that must be explored and examined to arrive at some determination.

"The initial thoughts and fundamentals are:

The composition. (a) Australian orchid species. (b) South Pacific area. (c) other orchid species. (d) Orchid hybrids.

"The location. This would be the vital factor to resolve and determine, for it should be reasonably accessible to the public, for one of the basic objects would be to stimulate interest in orchids. Maybe more than one location would be desirable.

"The environment. A site or sites with good natural conditions, trees and rocks, is desirable, or an area with soil suitable for planting host trees. Environmental factors should form part of the area. The Stoney Range Park at Dee Why, or the Orchid Park close to Rabaul may be used as guidelines.

"The security. Protection of any area chosen must be considered because of the great temptation, which is rather regrettable."

SUGGESTIONS WANTED

Mr. McCraith elaborated on this submission by stating, "The location or locations are of fundamental importance, before any other move is made, and therefore we are seeking any comments and constructive suggestions . . . The location could be situated somewhere along the central eastern coastline where the natural environment is suitable.

"It may be incorporated within a Botanic Gardens, or some area controlled by a Shire or Municipality, while other thoughts suggest an area that is free of these controlled areas. The planners must remain flexible.

"The Australian National Orchid Collection should be national in concept."

FINANCIAL SUPPORT

Apart from providing the original "germ of an idea" Mr. Hermon Slade strongly supports this project to an extent where he will "prime the pump" with a gift of $10,000 as soon as there is something real and tangible to assist.

"This Project presents many problems that will have to be overcome, but the concept is very attractive."

WHAT YOU CAN DO

Suggestions and assurances of support will be welcomed by Mr. McCraith for consideration by his committee.

Letters from orchid societies will be particularly welcome. Offers of financial support on the same basis as that offered by Mr. Slade will be gratefully received.

Remember this feasibility study must be presented to the next Annual Meeting of the Australian Orchid Council in as practical a form as possible. An offer of practical support from every orchid society in Australia will assure this project of success.

Send your ideas and offers of support to Mr. Gerald McCraith, 107 Roberts Street, Essendon, Victoria 3040.

NEED FOR CONSERVATION

Just recently a display of Australian native plants and orchids was held at the Sydney Town Hall to emphasise the preservation of our Australian flora.

What a sight to see *Dendrobium undulatum* all over the shores of small islands in the Great Barrier Reef.

Or chopping your way through the swamps and coming across great masses of *Phaius tankervilliae* in the far north.

Around Gloucester Buckets you are likely to see great cliffs smothered in *Dendrobium Kingianum* in many different forms and shades of colours from white to pink and even into red forms.

Walk down a sandstone valley throughout the Hawkesbury Plateau to smell a mustard odour and look up to see masses of yellow spikes of *Dendrobium speciosum.*

All these sights can still be seen to-day — but — will they be seen tomorrow????

A. Merriman in Parramatta O.S. News

Dendrobium Node Cultures
A New Method of Clonal Propagation

Joseph Arditti, Susanne K. Mosich and Ernest A. Ball, Department of Developmental and Cell Biology, University of California, Irvine, California 92664.

[1]Supported in part by grants from the Stanley Smith Horticultural Trust and the American Orchid Society Fund for Research and Education, contract from the Office of Naval Research and a Scholarship (to S.K.M.) from the Orange District, California Federation of Women's Clubs. An undergraduate research project in plant physiology and development.

[2]A listing of many references by us and others in several languages is included in this paper since we often receive requests for additional information. We cannot undertake to supply copies of papers by other authors.

Introduction of *Cymbidium* shoot-tip culture (Morel, 1960) as a means of clonal propagation opened new vistas in orchidology (Bertsch, 1967; Morel, 1965a, 1965b, 1971; Sagawa, Shoji and Shoji, 1960). The method was subsequently adapted to a number of other species (Champagnat and Morel, 1969; Kim, Kunisaki and Sagawa, 1970; Reinert and Mohr, 1967; Sagawa and Shoji, 1967; Scully, 1967: Teo, Kunisaki and Sagawa, 1973; Vajrabhaya and Vajrabhaya, 1970). Other orchid plant portions which have been cultivated include *Dendrobium* (Singh and Sagawa, 1972) and *Phalaenopsis* (Intuwong, Kunisaki and Sagawa, 1972; Kotomori and Murashige, 1965; Rotor, 1949; Sagawa, 1961; Sagawa and Niimoto, 1960; Scully, 1965; Urata and Iwanaga, 1965) flower stalks; *Vanda* stems (Sagawa and Sehgal, 1967); leaf tips of *Cattleya* and *Epidendrum* (Arditti, Ball and Churchill, 1971; Ball, Arditti and Churchill, 1971; Churchill, Arditti and Ball, 1971, 1972; Churchill, Ball and Arditti, 1970, 1973; Churchill, Flick, Ball and Arditti, 1971); *Cattleya* leaf bases (Champagnat, Morel and Mounetou, 1970), and young inflorenscences of *Vascostylis, Neostylis* and *Ascofinetia* (Intuwong, Kunisaki and Sagawa, 1973).

Shoot-tip cultures have two major drawbacks. First, the rate of success may be low. And second, an entire growth or a plant must be sacrificed. This is not the case with flower stalk cultures, but well-developed buds are not common on *Dendrobium* flower stems (Singh and Sagawa, 1973). With this in mind, we decided to develop an improved method for the clonal propagation of *Dendrobium*.

Axillary buds on stems present a logical possibility for culture *in vitro*. However, they may be inhibited. Such inhibition is usually due to auxin produced by the apical meristem. Thus, if the inhibition by auxin could be reversed, the buds can be expected to develop shoots. Anti-auxins are obvious means to accomplish this. One such substance is *trans*-cinnamic acid (tCA; van Oberbeek, Blondeau and Horne, 1951).

Materials and Methods

PLANT MATERIAL

Stems of *Dendrobium* cv Hawaii were freed of all leaves, dry sheathes and other external tissues. Then, they were gently scrubbed with a soft brush and household detergent (Tide) and rinsed thoroughly. Nodes from near the apex (25-33%) were separated from those in the middle (30-45%) and base (25-33%) of the stem. Sections from each region were cultured separately.

Base- and mid-sections were divided into 2-3 cm long pieces and surface sterilised. Discoloured tissues were removed after that. This reduced them to 1.5-2 cm in length, with the buds being approximately 0.75 cm from each end (Fig. 1).

Sections from the upper part of the stem were 2-2.5 cm long and included three buds. Following surface sterilisation, the buds were separated and the sections were 0.5-0.75 cm long. If buds were very close to each other, they could not be separated and sections, 1.5 cm in length, contained two buds.

All sections were pushed half way into the agar, right side up (Fig. 1).

SURFACE STERILIZATION

Clorox (household bleach containing 6% chlorine derived from sodium hypochlorite) diluted with water (1:1 v/v) was used. Sections from the upper part of the stem were decontaminated for 5-7 min. (longer exposures were lethal). Mid-stem sections were surface sterilised for 10-15 min. Those from the base required 20-25 min. The sections were washed in sterile distilled

TABLE 1

Knop's medium as used for the culture of **Dendrobium** node sections

Order of addition (1)	Components (2)	Amount per litre of culture medium (3)	Stock solution (4)	Volume of stock solution per litre of culture medium (5)
	Major Elements			
1	$Ca(NO_3)$. $4H_2O$	0.498 g	23.61 g/l (0.1 M)	21.1 ml
2	KNO_3	0.124 g	10.11 g/l (0.1 M)	12.3 ml
3	$MgSO_4$. $7H_2O$	0.123 g	27.70 g/l (0.1 M)	5.0 ml
4	KH_2PO_4	0.125 g	13.60 g/l (0.1 M)	9.2 ml
	Iron			
5	Ferric Citrate	1.0 g/100 ml		1.0 ml
	Minor Elements			
6	H_3BO_3	56.0 µg	56.0 mg	Add all minor elements to the same one litre of distilled water. Stir gently and heat until all salts are dissolved; add one ml of it to each litre of culture medium.
	$MnCl_2$. $4H_2O$	36.0 µg	36.0 mg	
	$ZnCl_2$	152.0 µg	152.0 mg	
	$CoCl_2$	20.0 µg	20.0 mg	
	$CuCl_2$. $2H_2O$	54.0 µg	54.0 mg	
	Na_2MoO_4 . $2H_2O$	25.0 µg	25.0 mg	
	F_2Cl_3 . $6H_2O$	50.0 µg	50.0 mg	
	Na_2 Ethylenedinitrilotetra-acetic acid (N_2EDTA)	80.0 µg	80.0 mg	
	Sugar		no stock	Add directly to culture
7	Sucrose	20.0 g	weigh out	medium
	Anti-auxin		no stock	Add directly to culture
8	**trans**-cinnamic acid	148, 14.8 or 1.5 mg	weigh out	medium
	Vitamin		95% ethanol	
9	Thiamine	0.4 mg	100 mg in 100 ml	0.4 ml
	Cytokinin		95% ethanol	
10	6-benzyl amino purine	2.0 mg	60 mg in 60 ml	2.0 ml
11	Agar[1, 2, 3]	13.0 mg	no stock weigh out	

[1]Autoclave agar in 500 ml of glass distilled water. While still hot, adjust volume with glass distilled water to 760 ml. Mix and dispense 15 ml into each of 50 tubes. Cap tubes and autoclave.

[2]Dissolve all components of the medium in 260 ml (total volume) glass distilled water and cold-sterilise through a Morton UF (Corning Glass Co., Corning, N.Y.) filter.

[3]Add 5 ml of cold-sterilised solution to each 15 ml of agar while the latter is still hot (above 45°C.). Mix and slant.

TABLE 2

Shoot formation of **Dendrobium** nodes on modified Knop's medium[1, 2]

Medium	Shoot development (% of total buds cultured) Section of shoot: Upper	Middle	Lower	Remarks
Knop's	0	0	0	Nodes died within two weeks.
Knop's plus 100 mg I and 0.4 mg Th.	0	0	0	Nodes died within 18 days.
Knop's plus 100 mg I, 0.4 mg Th and 2 mg BAP.	0	0	0	Nodes died within 18 days.
Knop's plus 100 mg I, 0.4 mg Th, 2 mg BAP and 148 mg tCA.	75-100	66	100	Growth evident within 25 days. Well-formed shoots developed within 45 days. None had roots.
Knop's plus 100 mg I, 0.4 mg Th, 2 mg BAP and 14.8 mg tCA.	100	100	83.3	Growth evident within 45 days. Well-developed shoots within 60 days. Two had roots.
Knop's plus 100 mg I, 0.4 mg Th, 2 mg BAP and 1.48 mg tCA.	80	33	57	Growth visible within 25 days. Well-formed shoots within 60 days. None had roots.

[1]BAP, N[6]-benzyl amino purine; I, inositol; Th, thiamine; tCA, **trans**-cinnamic acid. Amounts given per litre.

[2]All chemicals necessary for the preparation of these solutions can be obtained from standard supply sources such as CalBiochem, La Jolla, California; Sigma Chemicals, St. Louis, Missouri; Aldrich Company, Milwaukee, Wisconsin.

water after which discoloured tissues were removed. Aseptic techniques and sterile tools were used for all subsequent steps.

CULTURE MEDIA

Knop's medium with *trans*-cinnamic acid (tCA; Table 1, 2) was used for the production of shoots. Minerals and organic substances were sterilised through a Morton (UF, ultrafine) fitted glass filter (Corning Glass Co., Corning, N.Y., U.S.A.) and added to autoclaved agar. No pH adjustments were made and acidity was 4.9 (1.48 mg tCA), 4.3 (14.8 tCA) or 3.89 (148 mg tCA).

To induce root formation, shoots were transferred to Knudson C medium (Knudson, 1946) plus 15% banana (KCB; Arditti, 1968) or Murashige-Skoog (MS, Table 3) solution.

CULTURE VESSELS

Cultures were maintained in 25 x 100 mm tubes covered with metal caps.

CULTURE CONDITIONS

Cultures were placed under light banks consisting of Gro-Lux (two 40 watt tubes) and incandescent bulbs (two 50-watt bulbs) producing approximately 150 ft.-candles. Photoperiods were 24 hour long and the temperature was constant at 22 ±3°C.

RESULTS

Axillary buds develop into shoots only when Knop's medium contains tCA (Table 2). The buds start to develop after four weeks and plantlets are formed within 45 days (Fig. 2, 3). Most have no roots and must be transferred to a rooting medium 2-3 weeks after shoot formation (Fig. 4).

Shoots form roots on either KCB or MS. However, results are better on the latter.

DISCUSSION

The development of shoots on tCA containing media only is probably due to its anti-auxin effects. Both tCA and cytokinin can reverse apical dominance. However, in this case, both [our cultures contained benzyl amino purine (BAP)] must be present.

Lack of root initiation may well be due to the presence of tCA and BAP in the culture medium. Root initiation requires auxins and may be inhibited by tCA and/or BAP.

The method described here does not eliminate the need to sacrifice an entire

TABLE 3

Murashige-Skoog medium as used for induction of roots on **Dendrobium** shoots obtained from node sections

	Compound	Amount per litre of culture medium	Amounts in stock solution[2]	Millilitres of stock solution per litre of culture medium
	Macroelements			
1	KH_2PO_4	170.00 mg	13.60 g/l	12.5
2	$MgSO_4 . 7H_2O$	370.00 mg	24.70 g/l	15.0
3	$CaCl_2 . 2H_2O$	440.00 mg	44.00 g/l	10.0
4	KNO_3	1.90 g	95.00 g/l	20.0
5	NH_4NO_3	1.65 g	80.00 g/l	21.0
	Chelated Iron[1]			
	Na_2 — EDTA	74.50 mg	7.45 g/l	10
	$FeSO_4 . 7H_2O$	27.80 mg	2.78 g/l	
	Microelements[1]			
	H_3BO_3	6.20 mg	620.00 mg/l	
	$MnSO_4 . 4H_2O$	22.30 mg	2.23 g/l	
6	$ZnCl_2$	3.93 mg	393.00 mg/l	
	KI	0.83 mg	83.00 mg/l	
	$Na_2MoO_4 . 2H_2O$	0.25 mg	25.00 mg/l	
	$CuSO_4 . 5H_2O$	0.025 mg	2.50 mg/l	
	$CoCl_2 . 6H_2O$	0.025 mg	2.50 mg/l	
	Sugar			Add directly to culture medium
7	Sucrose	30.0 g	no stock weigh out	Add directly to culture medium
8	Agar[3]	13.0 g	no stock weigh out	Add directly to culture medium
	Growth Factor			
9	Inositol	100.0 g	no stock weigh out	Add directly to culture medium
	Auxin			
10	Indoleacetic acid	0.1 mg	50 mg/50 ml in 95% ethanol	0.1
	Vitamin			
11	Thiamine	0.4 mg	100 mg/100 ml in 95% ethanol	0.4

[1]Combine Na_2 - EDTA, $FeSO_4 . 7H_2O$, and microelements, make up to 1000 ml with glass distilled water, and heat 24 hr. at 60°C. to complete chelation before use in a culture medium.

[2]Store all stock solutions in a refrigerator at ca. 4°C., except the indoleacetic acid solution, which must be kept in a freezer.

[3]Melt the agar in 500 ml of distilled water, add the other components, mix, add sufficient distilled water to bring the volume up to 1000 ml, adjust the pH to 5.8 with 1N KOH, dispense to tubes, cap, autoclave and cool as slants.

growth or plant. However, it does increase the likelihood of success (Table 2). It also suggests that buds excised from base portions of the orchid stem can be cultured. Such a method, currently under investigation, will eliminate the need to sacrifice plants or shoots.

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Dendrobium Node Culture

Arditti, Mosich, Ball

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Orchid Seed Raising without Flasks

MRS. B. HARRISON

Ingredients

Seed pod (ripe)
Palm leaf fibre
Shallow dish
Formula 20
Plastic bag (clear)

This method of raising orchid seedlings particularly reed stem epidendrums is quite simple and easy to use, gives excellent results, producing strong healthy seedlings, free from moulds and fungus.

This fibre is obtained from local palm trees found growing in parks and old type homes in Queensland.

When the leaf falls from the tree, the fibre is found in the thick end of the leaf where it joins the tree, this is scraped out and finely prepared, then soaked in Formula 20 (and water as per directions on bottle), then squeezed out (not too dry) and placed on a shallow tray about $\frac{3}{4}$" deep, scatter seed, then put in plastic bag and tie up, hanging the bag up in a well-lighted area with no direct sun.

In about two to three weeks the seed can be seen to be showing signs of growth.

In about six months the young plants will be showing their roots, the larger ones can be lifted out and put in fresh fibre and put in another plastic bag to grow on and later put in community pots without plastic bag.

This plastic bag can be opened at any time and may need a light spraying to keep the fibre damp.

Dendrobium seedlings have been raised with this method but take longer to germinate.

25 Barton Road, Rainworth, Queensland

Editor's Note. Slabs of palm tree trunk have been used in almost similar fashion with fair success.

ORCHID SOCIETY OF PAPUA NEW GUINEA

The Society recently played host to forty-one members of Japanese orchid societies. The visit was promoted by Ansett Airways, using slides and a written commentary provided by O.S. P.N.G. Secretary Mrs. Andree Millar. After a stay at the University orchid collection members of the Society took the visitors on a bush trip to orchid country.

BOOKS ABOUT ORCHIDS

"A History of the Orchid"

A book by Merle A. Reinikka reviewed by Ronald Kerr.

Nearly four years ago, Mr. Merle Reinikka, then Editor of the *American Orchid Society Bulletin,* told me in a letter, that he was writing a history of orchids. When he relinquished the post in favour of an editorshop in Portland, State of Washington, I thought maybe he had relinquished the book too.

Happily not so! It was a pleasant surprise when a copy turned up in the mail, and even more pleasant to find it such a valuable reference work.

Succinctly, the book digests a massive five year research into a compact 300 pages. Pages crammed with drama, natural lore, and real life stories of explorers, collectors, botanists, horticulturalists, and pioneer orchid growers.

This is a book to be read from cover to cover for sheer interest, then put in a permanent place among the reference books on your shelf. One chapter contains a chronological list of all important orchid works — an item of immense value to all serious orchidologists.

The book is in two basic sections, of which the first part deals with Historical Development, including chapters on the emergence of orchids as botanical entities, classification, cultivation, economic growth, hybridisation, and science.

Part II consists of biographical sketches of all the important personalities who have influenced orchidology, from Carl von Linne onwards.

A History of the Orchid by Merle A. Reinikka. Price $15 American. May be ordered through an Australian bookseller, or direct from the publishers (add postage), University of Miami Press, Drawer 9088, Coral Gables, Florida 33124, U.S.A.

"You Too Can Grow Orchids"

A book by Ralph Handcock and Margaret Smith.

An orchid book that has gone into four editions totalling 30,000 copies certainly has a lot going for it. A new revised edition is now available.

This book is a wealth of orchid lore on the main genera explained by a practical grower, and condensed into simple and precise terms by a careful collaborator.

Mr. Handcock learnt his vast orchid knowledge by hard work, keen observation, and love of his plants.

Because the whole accent is on culture this is the best of beginner's books. Not only is it full of sound commonsense advice but it deals specifically with Australian conditions. There should not be any mystery about growing orchids, but if there is then this is the book to dispel any fears.

Recommended as an ideal gift for that someone just becoming interested in orchids, but useful too for the experienced grower.

You Too Can Grow Orchids by Ralph Handcock and Margaret Smith. Published by Dymocks, and readily available at most booksellers.

A Grand Orchid Lover Retires

In a way it is always difficult to accept the change from action to rest with most people and this difficulty will be even greater for most orchid lovers when Ralph Handcock, Orchid Grower and Nurseryman of Sylvania, N.S.W., retires from his business at the end of December.

Most orchid people throughout Australia have met or known Ralph Handcock; and it is perhaps opportune to mention a few of the "high-lights" in his life. Ralph was a baker by trade and for the early years of his life journeyed around working at his trade. In 1924 he purchased a five acre farm which is the site of his nursery. He first used his land as a market garden and through an association with the late Mr. C. Carter of Miranda started growing orchids in the early war years. Among his prize possessions is a coloured slide of an orchid label (taken by Mr. Fred Muelin which records: a back bulb given to him and says: "Lowianum 'the start' C. Carter 7-9-42".

Ralph has always been a great society man. He is a foundation member of the Sutherland Shire Orchid Society and one of his enjoyments is to provide the goodies for a party held in his nursery for those members of the Society who put on the Exhibits at the N.S.W. Festival and Winter Show each year. For years the committee meetings were held at the Nursery in a special room provided by him, one wall of which proudly displays the certificates and banners won by the Sutherland Shire Orchid Society over the years.

Basic gardening has always been behind Ralph's reasoning with orchid culture. He has had two books published on orchid culture and a visitor to his nursery can always depend on receiving valuable data on how to grow them.

Ralph tells all of his friends he is going to Darwin to set up an Aqua-Flora come Orchid Park. Whether it is in Darwin or still at Sylvania, all of his friends and orchid lovers wish him a long and happy retirement.

CHARCOAL AS A COMPOST

An investigation of its properties

G. C. MORRISON, M.A.I.H., F.L.S.

Accounts have been published extolling the virtues of charcoal as a compost, for example refer to Power (1968) and Gemenis (1968). Additionally, orchid growers are loud in their praise of charcoal but all sources sound a warning about "salt build up". The procedure advocated is always two or three flushes with tap water, whenever watering is required, after applying a soluble inorganic fertiliser.

In fact, Gemenis states he has always used an organic fertiliser on charcoal as he feels salt build up would be a danger. Others (verbal) consider charcoal to be so inert that organic fertilisers are useless, there being nil or negligible bacterial content in the charcoal compost to cause the breakdown of an organic fertiliser, therefore, the readily absorbed inorganic form is the only type to use. When this is done we should, of course, have two or three flushings with tap water to remove any salt build up.

Notwithstanding the expression of all these viewpoints I have not been able to find any back up for them so a few measurements appeared to be desirable.

The charcoal used in the investigation was No. 6 size and is in reasonably small pieces for use in up to 6 in. pots. These pieces have a major dimension of from about 1 to 2 cms.

WATER RETENTION

When testing soils for ionic and water retention properties the values obtained are expressed in relation to oven dry weight of the soil. The same principle was adopted in this case for charcoal.

In general there are four categories of soil water —

1. Hygroscopic water which is held on to the soil particles by such strong forces that the root hairs are not able to extract it. This is sometimes known as the Wilting Coefficient point but it is often considered that permanent wilting occurs when the water content reaches 140% of the hygroscopic value. This latter point is mentioned in passing and has no relevance to the investigation.
2. Capillary water is the amount of water retained in the compost after flooding. It is the water held by the compost (soil) against the force of gravity and the compost is said to be at field capacity.
3. Gravitational water is that which is not retained by the compost. It runs through the bottom of the pot after watering.
4. Available water is that available to plants and is expressed simply as — Available water = Capillary water — Hygroscopic water.

Table 1 shows the value of categories 1, 2 and 4 found experimentally for charcoal. Recognised typical values for various soil types are also shown in the Table to permit comparison. All are expressed as a percentage figure rounded off to the nearest whole number.

Table 1

	Capillary Water (Field Capacity)	Hygroscopic Water	Available Water
Sand	13	3	10
Loam	22	9	13
Clay	27	13	14
Charcoal	28	9	19

The hygroscopic water in charcoal, although it looks quite dry, is 9% and is comparable with dry loam. The interesting point however, is the extra large field capacity value which is comparable to clay. As a result charcoal has a better available water value than other soil types.

CATIONIC EXCHANGE CAPACITY

This is the ability of a soil (compost) to retain nutrients having a positive charge, e.g. potassium, calcium, magnesium and others, against the force of leaching. Electrostatic forces of attraction are responsible for this retention and it is possible to exchange a nutrient cation for say Hydrogen. This is, in effect, how a plant feeds on the soil nutrients.

Cationic exchange capacity (C.E.C.) is measured in milli-equivalents %, (meg. %) that is per 100 grams of soil (charcoal). It is a value independent of the atomic weight and valency of a nutrient and for comparison purposes is better than percentage figures.

The C.E.C. value is ideally a measure of soil fertility, a sandy soil has a value of 1 meg % and a real mucky soil has a value of near 100 meg %. Unfortunately, the method of measurement is subject to some debate, there being some differences of opinion on the point at which a soil is fully saturated with cations. The pH value is also of considerable importance. It is necessary to state the method used for the measurement, although the results are more useful for comparison of one soil to another than for their absolute value.

In this investigation the charcoal was saturated with a strong (2N) solution of Ammonium Acetate at a pH of 7 for 12 hours following the method given by Piper (1944). The ammonium ion is supposed to attach itself to all of the negative charges present on the charcoal, the existing substances being replaced and washed into solution, i.e. the charcoal becomes saturated with ammonium cations.

The solution was filtered off and discarded and the charcoal leached with ethanol (60% aqueous). To the first wash was added a little ammonium chloride and the leaching continued until the leachate was free of chloride ions. The ammonium ions were now exchanged for Potassium cations by washing the charcoal in a Potassium Sulphate solution. (0.1N for the first wash and 2N for subsequent washings). The leachate was collected and an aliquot taken for nitrogen determination as described below. From this the C.E.C. was calculated and found to be about 10 meg %.

This result, for what it is worth, shows charcoal to have a reasonable ability to hold and release nutrients but is nowhere as near as great as clay soils or as soils rich in organic matter.

RETENTION OF NUTRIENTS

Although the C.E.C. value of charcoal is not particularly high its porous nature could result in the retention of a considerable amount of nutrient.

In discussions on salt build-up, the ammonium ion seemed to be of some concern and the continued alkalinity of charcoal indicated the possibility of this. The other nitrogen ion of interest and one contained in typical "inorganic" fertilisers is the nitrate anion (NO_3-). As procedures exist for the sequential analysis of both the ammonium and nitrate ions (Piper 1944), it was decided that both of these ions should be investigated.

For this first series of tests fresh charcoal was used on each occasion. This produced some variability between the two runs of the same test but the results of the second run were always within 10% of the first run. Additionally, a blank run was done on the reagents to ensure that these were not contaminated with a nitrogen containing ion.

These tests were carried using 5 gm lots of charcoal (air dry). This is equivalent to 4.54 gms of oven-dried charcoal, this latter figure being used in the calculations.

In addition to checking the reagents for freedom from contaminating substances likely to affect the result, the charcoal "from the bin" was checked for residual ammonium and nitrate ions with the following result.

Residual ammonium ion —
10 parts per million (ppm)
Residual nitrate ion —
nil

Charcoal (5 gms) was immersed for one hour in a solution of Ammonium Nitrate (1N) and agitated intermittently. This is equivalent to about an 8% solution of salt which is considerably greater than the 0.1% strength recommended for fertiliser use. The solution was filtered off and discarded and the charcoal dried in warm air after which it was placed in a solution of Potassium Chloride (2N 10 ml) acidified to a pH of about 1.5. After one hour, during which gentle agitation was applied, the liquid was filtered off, collected and subject to analysis for ammonium and nitrate.

The result was —

Ammonium ion present	3,000 ppm
Nitrate ion present	3,060 ppm

To see how much could be removed by "flushing the pot", a further 5 gms of charcoal was subject to immersion in Ammonium Nitrate solution as before and left to dry in air after filtering off the solution. The charcoal was then washed by immersion in two lots of water (20 ml each time) for about 10 seconds each.

The remaining content was again measured.

Ammonium ion present	1,300 ppm
Nitrate ion present	1,230 ppm

These two washings removed some 60% of both ions.

The results are summarised in Table 2.

Table 2

	Ammonium ion (ppm)	Nitrate ion (ppm)
Residual value	10	nil
After fertilizing	3,000	3,060
After leaching	1,300	1,230

The next step was to measure the amount of each ion which the charcoal could extract from a commercial fertiliser used at the recommended strength of one teaspoon per gallon. The fertiliser was quite hygroscopic and although sealed in a plastic bag it appeared to be damp. The measured water content was found to be 1.5%. One teaspoon of the fertiliser, as supplied, weighed 4.6 gms but as this method of measuring has variable and doubtful accuracy there was little point in allowing for the 1.5% water. The concentration recommended, therefore, was near enough to 0.1%.

The nitrogen analysis of the fertiliser was given as

13.8% N as Urea
4.3% N as Potassium Nitrate
3.9% N as Ammonium dihydrogen Phosphate
} 22% N total

One hundred mls of fertiliser solution was poured over 5 gms charcoal in a filter and the charcoal allowed to dry. The charcoal was then immersed in Potassium Chloride solution as before for one hour and the analysis made.

This test was repeated using 400 mls of fertiliser solution poured over the charcoal in 50 ml quantities so making eight applications of fertiliser over a period of 16 days.

Table 3 sets down the results of the first test and shows the amount of ions available in the fertiliser and the amount taken up by the charcoal. Table 4 sets down the results of the second test in the same manner. Fresh charcoal was used for each test and no allowance has been made here for any initial ammonium ion content of the charcoal used, as this was not known for each sample.

The charcoal for these tests was taken "from the bin" and the bacterial content was unknown. No attempt was made to avoid contamination during handling. The second test was run over a period of 16 days and gave ample time for the microbiological activity to increase from a dormant state (spores) to a significant level after being fed with suitable nutrients.

Table 3

All figures are in ppm

	In fertiliser (100 ml)	Taken from fertiliser	% taken
Ammonium	39	24	62
Nitrate	43	30	70

Table 4

All figures are in ppm

	In fertiliser (400 ml)	Taken from fertiliser	% taken
Ammonium	156	120	77
Nitrate	172	48	28

Table 4 seems to indicate that the nitrate build-up is insignificant. Other tests were made using alternate applications of fertiliser and water, a sample being removed for measurement prior to each liquid application. The results of these tests are not given herein as they were quite variable and did not display any pattern except an out of phase relationship between the ammonium and nitrate ion peaks, i.e. an ammonium peak was a nitrate trough and vice-versa.

This can only be explained in terms of microbiological activity in the charcoal over a period of three to six days. The results in Table 4 could have occurred at a point in the time cycle where the ammonium ion was at a peak and the nitrate ion in a trough.

The application of fertiliser to the orchid plant

To investigate the affect of ammonium and nitrate ions on an orchid plant two small leaf type of *Dendrobiums* were used. These were the same species, of about similar size and grown in charcoal alongside each other, in 4 inch pots. The first acted as control and received a dose of commercial inorganic fertiliser every week plus one intermediate application of water. The climate was Sydney in May to June with temperatures of about 23°C. in the daytime and down to 7°C. at night.

The second plant was used as the test plant being supplied with three fertiliser strengths shown in Table 5 over the periods shown. The rate of application was about 50 mls per day. Between tests excess charcoal was removed (disturbance of the root system was avoided as much as possible) and the remaining charcoal flushed, over several days, with a large quantity of water (two pints) on each occasion. The pot was then topped up with fresh charcoal from the bin prior to commencing the next test.

The Ammonium Nitrate supplies only the ammonium and the nitrate ions and was used

to avoid the conversion of urea, present in the commercial fertiliser, into the ammonium ion in an unknown and uncontrolled manner. The Potassium Nitrate was used to eliminate the ammonium ion from the solution and to supply nitrate only to the compost.

At the conclusion of each test, the ammonium and nitrate ion content of the compost was measured and the result is shown in Table 5.

Table 5

Test No.	Fertiliser	Strength	Duration of Test	Ammonium ppm	Nitrate ppm
1	Ammonium Nitrate	0.8%	9 days	95	270
2	Potassium Nitrate	0.008%	16 days	70	76
3	Potassium Nitrate	0.08%	16 days	77	170

Test 1 was stopped after nine days when some of the leaves on the test plant turned yellow and fell off. The control plant did not display any ill-effects.

Tests 2 and 3 were continued for the full 16 days and at no time did the test plant show any signs of distress.

From Table 5 the ammonium concentration is very much the same for both Tests 2 and 3 and not significantly higher for Test 1. The nitrate content varies quite a lot and it appears that the toxic level of this is higher than 170 ppm and probably less than 270 ppm.

For herbaceous dicotyledons, a soil nitrate content of 150 ppm is desirable for good growth and the toxic levels above this are not known. Whether monocotyledons are more susceptible than dicotyledons to nitrate levels is also not known, but it seems that the nitrate (or the nitrites resulting therefrom) could be suspect. Ammonia is applied directly to soil to fertilise some monocotyledons, e.g. sugar cane, and the concentration must be quite high at times. Similarly, quite large amounts of Sulphate of Ammonia can be applied to lawns without ill-effects.

The use of two orchid plants, one as control and the other as the test subject is hardly sufficient to warrant conclusions and can be considered only as a pilot test. The results of this may however, be of some guidance in setting up a more comprehensive test using many plants of various genera.

Bacterial activity in charcoal

For this investigation, charcoal was taken from around the roots of an orchid which had been growing in charcoal compost for about three months during which time it had been fed with both fish emulsion and a commercial inorganic fertiliser.

Bacterial count

The usual serial - dilution - colony - count method was used, two counts being made from two independent samples of charcoal. This was removed from the pot in a manner to avoid further contamination due to handling by using sterilised forceps and sterilised aluminium foil to contain the charcoal.

Both counts were in close agreement.

1st count = 42×10^5

2nd count = 39×10^5

Therefore, there were four million bacteria present in one gram of charcoal which compares quite favourably with soil.

This method, while standard procedure, is acknowledged to suffer some deficiencies, particularly with charcoal, as one can never be sure just how many bacteria were not washed out of the charcoal crevices. Additionally, it is assumed that each colony arises from a single bacterium, whereas several may agglutinate to form one colony. Also, some bacteria are fastidious and will not grow on the ordinary medium used for colony counts.

The only fungus seen was a pink coloured yeast, rather prolific and which would account for some 20% of the count shown above. This yeast was not investigated further.

From the plate count, 16 colonies were selected for culture and purification. This finally gave 13 different species of bacteria. The 16 organisms selected were classified, as far as possible, to generic level, using morphological criteria and some 40 biochemical tests for each organism.

Due to isolation and culture methods, all were heterotrophic aerobic bacteria and most were classified as Gram negative. This presents a problem in classification as stated by Thornley (1968). "Aerobic gram negative bacteria which are non-pigmented, not polarly flagellate and do not ferment sugars present particular problems in identification, mainly because the genera in which they may be placed are so ill-defined".

The following genera were, however, deemed to be present —

Pseudomonas,
Acinetobacter,
Flavobacterium/Cytophaga,
Mycobacterium,

Bacillus,
possibly Alginobacter.

Probably of greater interest are the properties and capabilities of the organisms present. Several species were able to use carbon dioxide as the carbon source but none were found which could decompose cellulose. However, most species broke down sugars commonly occurring in plant tissue, e.g. glucose, sucrose, arabinose, xylose and galactose.

One species showed limited growth from atmospheric nitrogen and four showed good growth when using ammonium as the nitrogen source. Ten of the organisms tested could utilise urea as the nitrogen source so there is little doubt that fertilisers containing this substance would be used effectively and not just washed through the bottom of the pot.

The presence of proteolytic enzymes (for breakdown of protein) was reasonably common (seven species) and all organisms thrived on partially decomposed protein and four species could further breakdown amino acids to release ammonia.

The breakdown of nitrates to nitrites was carried out by seven species but none of those tested could convert the nitrite into ammonia. It is probable that organisms capable of this conversion were present in the compost as indicated by the presence of the ammonium ion from potassium nitrate (Table 5). These organisms are, however, very fastidious in their growth requirements and did not show up in the isolates.

To summarise, the microbiological life around the root system of a plant growing in charcoal and fed with organic fertiliser is active enough to ensure continued growth of the plant.

Bacterial activity in soil is low at 10°C. (50°F.) and it is assumed that the same conditions are applicable to charcoal. Therefore, any fertilising of the charcoal which the grower deems to be necessary during the cold months of the year, can best be done with the inorganic salt type of fertiliser rather than the organics. These latter are useful in warmer climates or seasons.

General Review of Tests

Charcoal has a high water holding capacity and probably a high water availability to spongy orchid roots which usually thrive in a humid situation. The retention of nutrients appears to rely rather more on its physical porosity than on its cationic exchange capacity and it is comparatively easy to flush any excess nutrients from it.

Charcoal in which an orchid plant is growing is very much alive with bacteria and may be fed with organic type fertilisers which will be broken down into substances which can be used by the plant.

Some further work has yet to be done on the toxicity level of inorganic fertilisers and the reason why toxic substances accumulate and the nature of these. However, it would seem that, unless the grower uses excess inorganic fertilisers, the normal watering or the misting of plants will be sufficient to rid the charcoal of any excess nutrients. One major advantage of using charcoal as a compost, without any other materials added, is the almost complete control one has over the fertilising of the plant. The charcoal lasts for ever and although some of the dead roots of the plant will eventually contaminate it, this seems to be a minor problem and bacterial activity will convert these roots into usable nutrients.

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34 Leuna Ave., Wahroonga 2076

ACTIVE YEAR FOR MANNING RIVER O.S.

Venue for Manning River Orchid Society's 16th annual orchid exhibition was Taree RSL reception room. A new type of staging was used — instead of the usual benches, the plants were displayed in three tiers. This conserved space and the public were able to see the blooms to better advantage. The exhibition was most successful and the quality of the blooms good.

Following were the major prize winners: Grand champion of show and grand champion cymbidium — T. Stitt with *C.* San Francisco 'Meadow Mist'.

Reserve champion cymbidium — Mrs. S. Callaghan with *C.* Dorchester Jeanette.

Best cymbidium for colour — Mrs. S. Callaghan *C.* AWB 'Dover Heights'.

Champion other than cymbidium — K. Folkard *Cattleya* Henrietta Japhet x Bob Betts 'White Christmas'.

Outstanding native — R. Perkins — D. Delicatum.

Outstanding exhibit of show. Orchid Society of N.S.W. medallion — Ted and Barbara Gregory for display of native orchids.

During the holiday weekend the society held a most successful orchid display at the Forster Oyster Festival. There were 21 varieties of orchids on display and among the visitors were some from Melbourne and Tasmania.

Members have had a busy time during the year with a Cattleya display, a winter display, spring exhibition and a display at Forster.

HOUSING YOUR ORCHIDS, PART III

THE IRON FRAME SHADECLOTH HOUSE

RONALD KERR

An orchid house with metal frame, wire mesh benches and shadecloth covering is close to the ultimate in shade houses.

It has many advantages. Durability is the first of these but not the most important. Properly constructed the metal frame is a lifetime job, and its shadecloth covering can be made to last for very many years.

However, the vital thing about such a house is that it prevents the influx of most insect pests. Careful construction eliminates cracks through which moths, butterflies, locusts or beetles can enter, and thus most leaf chewing grubs are eliminated. Snails and slugs are also kept at bay.

There is no timber to hide minute predators, carry brown rot, or provide homes for ants and termites. Only the smallest insects can squeeze through the weave in shadecloth and an occasional spraying will look after them. You can eliminate the spraying with your own biological control system on the principle that while most predators can be kept out, the allies, such as frogs and lizards, can be kept in.

Shadecloth enables you to obtain a desired amount of light to suit the genera you wish to grow. It does not help you to greatly extend the range of genera you can grow, but it does ensure that those compatible with your climate can be grown better.

Shade can be varied in different parts of the house, depending on what you wish to grow, but before buying the shadecloth carefully assess your growing needs, immediate environment and position on the map.

Shadecloth comes in a number of different weaves, each of which permits only a portion of light to pass through. This is expressed in percentages. For light loving orchids, such as cymbidiums and terete vandas, 30% shade may be sufficient, but growing these two genera together in the same shadehouse could be difficult. Vandas are warm growers, except for a few of the strap-leaf section, and will rarely flower well in a shadehouse not situated in the tropics or semi-tropics. Cymbidiums on the other hand do best in temperate areas and require extra shade at the northern limit of their range.

Another factor influencing the decision on which percentage to use is the extent to which your yard is already shaded. Trees and buildings will make it necessary to use a cloth which will admit more light.

There are at least three good brands of shadecloth on the market and all have a percentage range of shade approximating 30%, 50%, 64%, 72% and 80%. Two have a cloth of 95%, which is virtually waterproof, and one has 36%. The products of *Australian Orchid Review* advertisers are very reliable.

An ideal arrangement would be to use a low percentage shade in winter and change to the next highest percentage in summer, at any rate in the temperate and cool zones where there is a marked seasonal variation. This is rarely practical. Some growers work on the principle that by adopting a percentage suitable for winter growing it is always possible to add more shade for the really hot weather. One well-known cymbidium flower export grower has wires under the rafters of his growing house 6' apart along which shadecloth can be pulled on runner rings. This way the additional shade can be provided very quickly — and removed just as fast.

It is possible to list in a very general way the percentages suitable for various genera in different climatic zones. Such a list is given below. It shows the probable shade needs for most of the species in each genus. In some cases the percentages may be a little too much for winter, or not quite enough for summer. Some areas will be intermediate to the zones, and tropical pockets may be found in the temperate zone. Altitude may extend the temperate zone into the tropics.

Where areas are subject to frost, shade cloth of 50% or more does provide a degree of protection.

In the tropics, genera such as *Vanda* and *Arachnis* will grow and flower best in the open, however, because of the protection given by shadecloth from prolific tropical insects it will be advisable to flower the better varieties in a 30% shade house.

Some species will have radically different needs to the majority of the genus, and an

example of this is *Sarcochilus hartmannii* which will thrive in full temperate zone sun, whereas other *Sarcochilus* species need 64% shade or more.

Before selecting the percentage to buy talk with experienced growers in your district, and check the genera they grow in their shade houses.

GENERA NEEDING 30% SHADE

Tropical zone. *Angraecum, Arachnis, Arpophyllum, Calanthe, Dendrobium* (other than softcane), *Epidendrum, Gongora, Laelia, Phaius, Renanthera, Rodriquezia, Sobralia, Spathglottis, Vanda* and most other *Sarcanthinae*, Cattleya (bifoliate).

Temperate zone. *Aerides, Arpophyllum, Brassovola, Brassia, Cymbidium, Epidendrum, Dendrochilum, Laelia, Oncidium, Phaius, Rodriguezia, Sobralia* Vanda (strap-leaf), small vandaceous.

Cool zone. *Angola, Bletella, Cymbidium, Dendrobium* (softcane and native), *Epidendrum* (reed stem), *Huntleya, Maxillaria, Oncidium, Pleione, Stanhopea.*

GENERA NEEDING ABOUT 50%

Tropical zone. *Aerides, Brassavola, Brassia, Bulbophyllum, Catasetum, Cattleya, Cycnoches, Oncidium, Stanhopea.*

Temperate zone. *Bifrenaria, Bulbophyllum, Cattleya* (bifoliate), *Coelogne, Encylia, Lycastes, Maxillaria, Paphiopedilum, Pleione, Stanhopia.*

Cool zone. *Lycastes, Masdevallia, Miltonia, Odontoglossum, Paphiopedilum.*

GENERA NEEDING 64% SHADE

Tropical zone. *Angola, Coelogne, Lycastes, Phalaenopsis.*

Temperate zone. *Masdevallia, Miltonia, Odontoglossum, Sarcochilus.*

BUILDING THE FRAME

The easiest type of shade house frame is built with galvanised piping and Downee joints. While ¾" pipe may be satisfactory in a house of about 12' x 9', 1" pipe represents only fractionally more cost and the extra strength is worth it. Where the house is larger than this 1" pipe, or even 1¼", becomes obligatory.

The pipe is bought in lengths of approximately 21', threaded both ends, and with a coupling on one end. The economical way to use it is to cut off the length required, then if the balance is too short just add it onto the next length. Two substantial wrenches, or a vice and wrench, will be necessary to ensure a satisfactory join.

An alternative to G.I. piping is 1" angle iron. It is cheaper than the pipe unless you require it galvanised which generally has to be done to order. It can be cut to size and have holes drilled for assembly with bolts. A power drill is essential equipment. If you have welding equipment the wall sections can be made up flat on the ground, and raised into place. Welding is best done on non-galvanised iron because the heat of welding destroys the zinc coating.

If rust is present, coat with one of the rust converting compounds before painting. The first coat on iron should always be Red Zinc Chromate primer, which is a rust inhibitor, and the final coat can be any good roofing paint or full gloss enamel.

One grower who has used angle iron has painted his frame in white on the principle that it reflects more light to the orchids.

The bench frame should be a part of the house frame so that each augments the stability of the other.

A.R.C. mesh is best for the benches. Mesh size 3" x 2" is adequate for cymbidiums in pots of 6" or larger, but for smaller pots use 3" x 1".

The frame should be designed in modules of 5' 11" so that the cloth may overlap slightly at the joins and still leave a little for shrinkage. If Downee joints and piping are used the spacing lengths should be 5' 9".

Breadth will depend upon the bench layout, and this should not only conform to the needs of accessibility but also to economical cutting of the A.R.C. mesh. The mesh comes in sheets of 10' x 8', thus economical bench widths are 5' and 3' 4" x 8', and 4' x 10'. Unless your arms are very long 4' wide is a bit much, and 3' 4" about right. Five feet is good for a centre bench which can be reached from both sides. The mesh can be cut with a hacksaw or welding torch, and cut edges should be painted promptly with a metal primer.

Benches need supporting cross bars at a maximum 3' centres, less if they are to take large specimen plants. Uprights may be 4' to 4' 6" centres, again according to the weight to be placed upon them.

In a two bench house, benches of 3' 4" with a 3' centre aisle would give a house width of 9' 8". Because three widths of 3' 4" can be cut out of a 10' x 8' sheet of mesh an economical length would be 24'. Or, one length can be placed at right angles across

the end of the house, making it 19' 4" long. With a centre bench of 3' 4" and another 3' aisle the width becomes 16', and with a 5' centre bench the overall width is 17' 8". Adjustments to suit your building area can be made by varying the aisle width, but 30" is a practical minimum. Where a centre bench is planned it is advisable to have the aisle go right around it.

A frame to hold a door should be built into a convenient module. This should allow for a door 32" wide and 6' 8" high.

Height of the shadehouse may be determined by local building regulations. Between 8 and 9' is desirable as this allows room to hang the light loving plants. Having worked out your structural plan in conformity with council requirements, the next step is to mark out the ground.

CONSTRUCTION STEPS

The starting line should be the length nearest your boundary. Determine this and drive in pegs a few feet beyond where the end corners will be placed. Measure the width from the pegs and drive in similar pegs. Do the same for the end walls and connect all four pegs with taut string. Where the strings cross will indicate the position of the shadehouse corners.

To ensure accuracy, take another string and measure the two diagonals. If the lines are square the diagonals will be equal.

Assemble the first side on the ground then push it to the vertical alignment. With a big section, the help of a few friends may be necessary. Arrange props to keep it upright. Then put up one end. The two sections plus props will have some stability. Carefully check all uprights with a spirit level, adjusting the props until they are correct. Then do the same for the horizontals. From this stage it is simply a matter of completing one module at a time. By the time all sections have been bolted or welded together the structure acquires quite a degree of rigidity.

Before putting on the shadecloth, paint the metal a light green colour.

APPLYING THE SHADECLOTH

A tight surface of 4", or smaller mesh, galvanised netting may be stretched over the frame to support the shadecloth. If this is not done, a lacework of single wire strands is advisable. The wire should be painted with silver roofing paint because the zinc can be poisonous to plants.

Shadecloth is placed over the frame so that it runs along the slightly less than 6' wide module. The shadecloth of the next module will overlap slightly to simplify joining.

Joining may be done by interlacing thin wire along the overlapping edges, or sewing with terylene thread of 3/40 or heavier gauge. A sound practice is to use 2" plastic webbing as an underlay to the join so that it lies along the metal frame. This may be sewn, or, quicker, glued with Selley's "Quik Grip", Colan "Shadebond", or similar product. Whether sewing or gluing it will be a lot easier to thread the webbing and two shadecloth edges together with wire and allow shrinkage to take place first. Then the glue can be applied by forcing it well into the join and webbing with a knife, or it may be joined by sewing. After sewing, or when the glue is dry, the wire can be pulled out.

Webbing greatly reduces the danger of hail cutting the cloth at points where it is resting on metal.

The cloth will go right around the module, starting one side and finishing the other. Make sure it is cut off with several inches to spare to allow for 4% shrinkage. The cut edges should be lightly brushed with Selley's "Quik Grip", or similar, to prevent the weave unravelling.

The simplest way to finish the wall side is to bury it. This will reduce the life of the cloth. It is neater to build a wall around the perimeter of the house. This may be fibro, brick, concrete or stone. A tallowwood batten should top this wall. It may be secured to the iron frame with J bolts or by bolts set into cement or mortar while it is wet. The shadecloth can then be sandwiched between this batten and another. Only tack the top batten lightly until all shadecloth shrinkage has taken place — a process which may take up to six months.

The fact that new shadecloth has to be left loose to shrink may result in flapping during heavy winds. To obviate this run several strands of wire over the top of the cloth in a criss-cross pattern in addition to whatever support is underneath.

The webbing which edges the shadecloth on the door should protrude sufficiently to fill any gaps when the door is closed.

The next article in this series will also deal with shadehouses.

57 Mt. Pleasant Ave., Normanhurst 2076

BUILDING THE SHADEHOUSE

Stages of construction













Photos: Ronald Kerr.

Top left: Showing the simplicity of construction with "Downee" joints. The joint on left is a "T", on the right a "Crossover". Top right: A vertical could sink with too much weight. Here it is placed in an agricultural pipe which was later filled with cement. Both pipes rest on a brick. The agricultural pipe also protects against corrosion. Middle left: Demonstrating how a side is held in position with props. Each upright is positioned with a spirit level. Middle right: Showing how a tallowwood batten is held to the frame with a "J" bolt. In this case stonework is built to batten level then cemented in. Yellow ochre was used to colour the cement. Bottom left: Centre and back benches are six and twelve inches higher than the front, northern, bench to give back more light. Bottom right: Shadecloth is sandwiched between two battens, and only loosely tacked down until it shrinks. Wall lower than bench is for air circulation under pots.

TRENDS IN CYMBIDIUM BREEDING

TOM HENRY

From a paper presented at the Third Australian Orchid Conference

Cymbidium hybrids are produced for several and varied reasons. Perhaps the most important reasons are: the creation of new colour combinations, more flowers to the spike and more spikes to the plant, flowers of larger size, better form and substance.

New colour combinations, such as those we call 'polychromes', are most attractive flowers. Most of the better varieties we have in Australia were bred from a crossing of Nam Khan with Profita, giving us the Anita.



C. Anita 'Janice' (Nam Khan x Profita)
A famous polychrome, awarded HCC/OSNSW

The Nam Khan transferred to its progeny a very fine decorative spike habit, but also transferred the bad habit of shy flowering, undoubtedly the reason why Nam Khan is not used so much as parent today.

More flowers to the spike and more spikes to the plant are necessary attributes, providing that quality and size is not lost in the process. In some cases, to obtain quality and size, we have lost numbers on the spike, but these can be improved by more selective use of diploid parents. Of course this also applies to spikes per plant, an important essential in any hybrid. It is not much use growing a plant, irrespective of how good the flower, if it is a bad producer, as space in every collection is so important today.

Larger size, better form and substance have been attained in the past ten years. In the more advanced hybrids, with several generations of breeding behind them, there still exists the recurrence of much variability in the offspring. This variability is good for several reasons: The thrill of producing hybrids would be lost if you knew beforehand that the flowers would be one particular colour or every bloom would conform to certain standards. While this variation will doubtless continue, there is no doubt that quality blooms of the future are going to be bigger and better, the champions of today being the culls of the future. This also explains the fluctuations in prices of plants of the same cross offered for sale and caters for the tastes of different growers.

Before making a hybrid the professional hybridist gives a great deal of thought to the mating of two plants. His professional training has given him knowledge that cannot be bought and is only acquired after years of experience and research, a great many failures and some successes. Far too many inferior crosses are made, and raised, using inferior parents with completely worthless results. Before making and raising a cross, remember that the interval between hybridising and flowering is a large chunk out of your life. Apart from the costly process of flasking and raising the plants, there are already in every collection too many hybrids of poor quality. Always strive for something better, nothing else is worthwhile. Parent plants selected as breeders should have distinct qualities and be strong and robust.

From experience it is found that by following a certain line of breeding, i.e. using particular parents, a rather high average of good quality blooms is produced by the offspring. For instance, by mating a tetraploid with a diploid good quality triploid blooms are the result and the average of quality is also good. This in the main is "end of line" breeding, but the triploids grow and flower freely and carry the numbers on the spike. The commercial hybridist has endeavoured always to produce the blooms that are popular with the ladies, who are the ones we have to please if we want to sell flowers.

Some years ago, the *Cymbidium* grower was influenced by the flower exporter to grow mainly white and pastel blooms for the flower trade, these colours proving easier to sell. This trend is gradually changing. Now there is a large demand for coloured flowers, yellows, greens, fawns and polychromes and even reds are proving popular. Reds are particularly popular with the

The Mary Anns
Bred from *C.* Pearl Easter and *C.* and C. Rosanna 'Pinkie' the Mary Anns have the attributes for breeding.



C. Mary Ann 'Simplicity', AM



C. Mary Ann 'Ann Haines', HCC

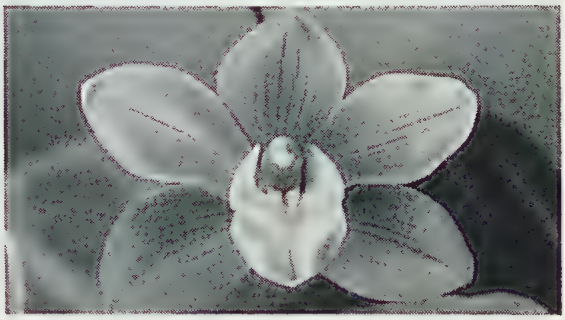


C. Mary Ann x C. Claudona 'Rajah' — a new massive white from an outstanding cross.

hobbyist growers, who want variety of colour in their flowering house.

In later years, a few hybridists in Australia have endeavoured to produce blooms that are true colours, which do not have to be shaded during the bud stage to flower their natural colour. A cross raised at Avalon, viz., President Wilson 'Concolor' x Sussex Dawn 'Dorothy May', has produced for us 99% of these true colours that are known as "non-staining". The plants from this cross, unlike most diploids, form good large bulbs, grow and flower freely, and no doubt the best of these will prove famous breeders in the next few years. The cross has been registered as 'Araluen'.

The trend to produce this type of bloom has done and will do a great service to the growers of flowers for the trade.



C. Araluen 'Fantasy', AD/OSNSW

Many seedlings flowering today have a quality in their flowers that makes *Cymbidiums* thought of so highly a few years ago a subject for the scrap heap today.

The trend is to produce something still better, pure in colour and plants that are stronger growers. A commercial grower must consider every square foot of space in his house to produce a certain number of spikes and flowers, or it is wasted space.

The general belief is that a *Cymbidium* that carries ten to 14 blooms per spike is ideal for the showbench and export trade. With a spike of this size and number of blooms, the best quality blooms will result. Who knows? In a few years we may be able to breed the plants that are strong enough to carry twenty to thirty blooms to the spike, all measuring up to our standards.

The most important thought in the mind of all professional growers is to produce plants to flower in non-flush seasons. In the past few years our flowering season has been extended a great deal, our "earlies" are getting earlier and our "lates" later. Once again in producing these plants we come up against the problem of *Cymbidiums* dropping their buds. Due to our climatic conditions, very few *Cymbidiums* in bud can stand excessive heat, but these problems will be overcome, by using selective parents.

25 Ruskin Rowe, Avalon Beach 2107



Two unusual native orchids



Above: *Thelymitra variegata.* Commonly called "The Queen of Sheba" orchid. Grown and flowered by Mr. Tibor Bodragai, a member of the Bunbury Group of the Orchid Society of W.A. Mr. Herb Foote made a round trip of 200 miles just to take this photo. *T. variegata* is endemic to the West Australian coastal plain between Julien Bay and Esperance, and is not common. It is noted for the rich iridescent sheen of the flower. Approximately twice life size.

Below: *Sarcochilus falcatus.* This is the unique pink form reported, but not pictured, in the December, 1972, issue of "A.O.R." by Mr. Wal Upton, page 209. The clone was found in the Casino district of N.S.W., and photographed by Mr. J. Bodley, President of the Casino Orchid Society. It is now being used as a parent plant by Mr. Bill Cannons of Wayside Nursery.

THE TOOWOOMBA O.S. SHOW

(Miss) ELSIE MILES

The Toowoomba Orchid Society held their Annual Spring Show during the Carnival of Flowers week at the Myer Rooftop Car Park in an area of about 3000 sq. ft. Thus changing part of the park into a wonderland of beauty.

From their terraced stands the cymbidiums fell in cascades obscuring all foliage except between the terraces. These long-lasting colourful flowers of waxlike consistency, species and hybrids, formed the greater part of the show. They were mounted on triple terraces which were gracefully curved and finished ornately with bricks. They covered most of the outer boundary, broken only by a triple arch framed in foliage and fern, from which hung festoons of dendrobiums, oncidiums and other genera. At the base and stairway various types of cattleyas, vanda, paphiopedilum and many other miscellaneous orchids were tastefully displayed.

Masses of flowers of all native genera were here in abundance. Most colourful were the numerous clusters of Dendrobium Kingianum ranging from white to rose pink and Dendrobium Speciosum with their long, sprays of cream and yellow blooms. A feature of this section was a tub of *Den. gracillimum* which gained the award for the Best Specimen Native Orchid. This orchid is said to have been grown by the parents of the present owner, 52 years ago. Small areas were set aside in this display for the native hybrids and the terrestrials, both of which are gaining popularity. Perfume from this section pervaded the whole area.

The Champion Orchid of the Show was Cymbidium Mary Ann 'Simplicity' owner N. Douglas. This orchid also won the award for the Best White.

WARRINGAL O.S. HELPS CHARITIES

This active Victorian Society held a late Spring Show in mid October at the Northland Community Centre. Proceeds went to the Northland Lions Club for their various charity works, particularly the Austin Kidney Machine and Research Laboratories. Featured was a display of tropical orchids flown in by Qantas.

SHOALHAVEN HAS 18TH SHOW

Dominant at the Shoalhaven Orchid Society Show was Mr. J. Apperley's fine 12 ft. by 8 ft. Group of Orchids and Foliage Plants. This exhibit was awarded the Australian Orchid Council Award for Most Pre-Eminent Entry. It contained many prize winning plants, gaining Mr. Apperley the Bronze Medal, donated by the O.S. of N.S.W. for the Most Successful Exhibitor. His *Cymbidium* Mallana 'Shoalhaven' was Grand Champion.

Unique Themes at Nambour Show

JEAN SCHMIDT

Abridged from Gladstone O.S. Bulletin.

As we entered the lovely big hall what a sight met our eyes — the most glorious display of orchids we have seen. The various District Displays were against the wall right around the room, with individual tables spaced in the centre. The plants which took our attention most were the cymbids first of all, then the phallies, and the white kingies. The kingies really helped to show off the other orchids.

There was one display of natives alone, with kingianums by the dozen.

I particularly noticed material used in the displays. One used moss for the floor (fancy gathering all that moss), another used bark chips, yet another used short lengths of ti-tree logs with gravel paths in between.

Each display had a theme such as "Orchids for the Bride" and "The Moon Flower". The centre table arrangements and themes took my fancy. One was labelled "Beauty and the Beast". It took me a while to see the point I'm afraid — an ugly pot of cactus surrounded by the beautiful orchids and foliage.

The juniors had their table which showed different potting media, with a pot of *Phauis tancarvillae* at each end of the table.

Another display had a doll with a basket standing among the plants, labelled "Who'll buy my pretty flowers?" But the simplest theme of all was set on a small table made from a thick round of log, still with the bark on, standing on three crooked legs — the whole thing polished. Standing on it were two pots of epidendrums. One was a small specimen of the ordinary epi with one stem of about a foot high, and the other another single stem of an epi-king, all of eight feet high if it was an inch, with a huge head of flowers on top. You really had to bend your head back to see it. This was labelled "Two of a kind". So simple but so effective.

WATERING WISDOM

— *Grafton Orchid World*

In an address to the Grafton Orchid Society in October last Professor Walter Birsch gave this advice on watering:

"If you investigate the compost of a cattleya and find it dry, leave it another two days before watering. If your cymbidium compost is dry, water it. However, if your slipper compost is dry, it should have been watered two days ago."

"The Queen of Sheba"

Thelymitra variegata

HERB. E. FOOTE

Having a visit from a chap who casually mentions "I have the 'Queen of Sheba' out at present" is enough to bring any native orchid lover up with a jolt. (How I've searched for that treasure, but in vain) — Immediately we made plans, and the following Saturday I presented myself with camera in hand to Mr. Tibor Bodrogai of Bunbury, just over 100 miles south of Perth.

Well there it was! Fortunately the day was bright in patches and it stayed open for me to make some exposures (didn't I curse that wind). Thelymitra variegata belongs to that group of sun orchids which will never make it to an evening orchid meeting as it shows its rare beauty only at times each day to suit its own needs. Tibor thinks that atmospheric pressure, as well as light and warmth, may be a factor causing it to open. Unlike other sun orchids he said "once it decides to close the sun alone will not open it again the same day, and indeed this is what did happen that day".

Tibor has a fine collection of W.A. native terrestrial orchids, and is accumulating a knowledge of immense value regarding the culture of these rare beauties.



Some of Mr. Tibor Bodrogai's collection of terrestrial orchids.

Editor's Note: Mr. Tibor Bodrogai is a member of the Bunbury Group of the Orchid Society of West Australia. As Mr. Foote's photos shows he knows how to grow the difficult W.A. terrestrials and it is hoped to have an article from him at an early date on the way he grows them.

NATIVE ORCHID GROUP FOR W.A.

Mr. Herb Foote, indefatigable Editorial Associate for "A.O.R." in West Australia, has been steadfastly laying the groundwork for the formation of a Native Orchid Study Group.

The group will operate as part of the O.S. of W.A.

West Australia has many fine growers of native orchids, including some who specialise in the beautiful endemic terrestrials.

Those interested in joining the Group should contact Mr. Foote at "Foothills", Hale Road, Forrestville 6058.

THE ORCHID SOCIETY OF W.A.

SPRING ORCHID FESTIVAL 1973

HERB FOOTE

The Carousel centre was transformed into an orchid garden of rare beauty and excellent quality for three days from September 13. Display Supervisor Hal Smith with Show Marshal Jim Baylis and their crew of workers did a splendid job in organising, constructing and setting up the exhibits. Everyone who saw this year's festival was well pleased with the event both for quality and display. The team of lady workers were again in evidence throughout the show.



C. Whyalla 'Rose Pink'

Champion Cymbidium of the Festival went to Roy Brown's *C.* Whyalla 'Rose Pink' and Reserve Champion was Ken Rex's *C.* Edna Cobb 'Sunset' which also won the prize for outstanding colour.

The Best Seedling was won by Mr. and Mrs. Gale's *C.* Balkis 'Luath' x *C.* Epping 'Rona' which also won the Delacy Award for Best Novice. The C. D. Nalder Trophy (best three orchids different genera) was won by Mr. R. Lakides. The Ken Birk Award (three different coloured cyms) went to Mr. and Mrs. Janney — the G. Herman Slade Trophy (three distinct species) to Mr. Ken Rex, and the Harold Hill Memorial Trophy (best phalaenopsis) to Mr. B. J. Hayes.

Mr. and Mrs. Janney's name appeared on four firsts and ten seconds! Other names appearing often on prize cards were:—Rex, Foote, Fleming, Lodge, Lakides, How and Hayes. Mr. and Mrs. Gale scored most in the Novice Section while Mrs. Ulrick came next followed by Mr. and Mrs. Baylis and Mrs. Natham. It was good to have exhibits from members of the Bunbury Group and to see the name of Mr. and Mrs. King (of Boyanup) on a prize card.



A scene at Westfield Plaza, Burwood.

ORCHID SOCIETY OF N.S.W.

Spring Festival

Tens of thousands of people saw a magnificent array of displays by twelve affiliated societies, and many individual growers, in the Westfield Plaza at Burwood, N.S.W. As a result many enquirers for membership were entertained at the October meeting of the Society when a special programme for beginners was presented.

Grand Champion was Mr. Gordon Gile's *Phalaenopsis* Schone von Celle, and the Reserve Champion was *Cymbidium* Ann Baxter 'Winifred Betty' owned by Mr. W. Hughes.

Best District Exhibit went to Eastern Suburbs with an astounding array of quality clones in a wide range of genera, set around an English Derby race theme.

In the foreground of the above illustration is the exhibit "Roman Spring" which won the affiliated Society class for Sutherland Orchid Society.

Silver Medals were awarded to Mr. G. Colthup and Mr. G. Brandon for their display of Australian natives and hybrids, and to Mr. M. Corrigan and Mr. P. Spence for Best Group of Orchids and Foliage. The latter featured orchids piled high around the "Old Mill at Limburg".

VICTORIAN ORCHID CLUB

Festival of Orchids

Abridged from an article by Garth Luke.

The nineteen stands on display in the Camberwell Civic Centre seemed to be better laid out and arranged than in past years. There was little massed tiering of en masse orchids, instead the flowers were better spaced to advantage, with more use of foliage plants.

Sensation of the Show was undoubtedly Mr. Bob Hodgin's *Cymbidium* Wallara 'Gold Nugget'. This plant was the Best Golden Orchid of the Show, Champion Orchid of the Show, Champion Cymbidium, Yellow Cymbidium and Export Cymbidium — in all five wins with one plant. It had pride of place on the stand, centre rear, surrounded by a large group of good cymbidiums with greens predominating, and many foliage plants.

Centre stage was the McBean's exhibit — a match of that staged at the Adelaide Conference. It was a highly tiered stand over the simulated entrance to a goldmine, the foreground showing gold pan and digging tools. It entirely comprised top quality cymbidiums in a complete range of colours so the overall effect was bright and colourful.

Attractive and original displays were set up by Mr. Gerald McCraith, Miss Marjorie Kirkbright, Mr. Ron Smith, Qantas with exotics from Singapore and Honolulu.

Mornington Peninsula Orchid Society, Melbourne Eastern Orchid Society, and the Victorian Orchid Club, contributed outstanding collective displays. In addition there were many smaller displays of sparkle and charm.

MELBOURNE EASTERN SHOW

While most of the big guns of the orchid world were off to Adelaide for the Conference members of Melbourne Eastern Orchid Society staged a Show in the Auditorium at Chadstone which delighted many people. Mr. Bob Evans took the top two trophies with Champion Orchid of the Show, *Cattleya* Bob Betts 'Lily', and Grand Champion *Cymbidium* Borough Green 'Opal'.

GLADSTONE'S POWERFUL SOCIETY

The Gladstone Orchid and Foliage Society really makes its presence felt. Last October they were hosts to growers from Bundaberg, Maryborough and Rockhampton in a round of visits to local collections and a trip into the dense Bulburin scrub country. At Bulburin many species were seen growing in their natural habitat.

The Society assists members by collective buying of pots, orchid hangers, and compost. A good orchid reference library is available to members. A Spring Showing of orchids was held in the Valley Drive-In and this attracted much interest from the public, many of whom wanted to buy everything in flower.

Meetings are held on the first Wednesday in each month, at St. Matthew's Hall Toolooa Street, Gladstone, Queensland, and new members and visitors are very welcome. The President is Mr. N. Hick, and the Secretary is Mr. W. Clarke. Both may be contacted through P.O. Box 867, Gladstone 4680.

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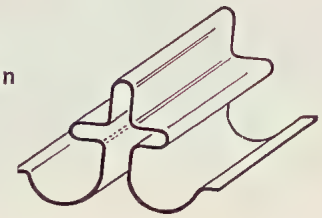
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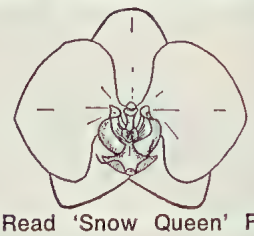
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There are nearly 100 orchid societies affiliated with one or more of the above State Societies. For the address of one close to you write to the Secretary of your state society. Advice on forming a society can be given if there is not one in your area.

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Australian Orchid Review

PUBLISHED QUARTERLY

Volume 39, No. 1 75 cents March, 1974



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Left: Pharaoh 'Almighty'. Middle: *C.* Sleeping Dream 'Tetragold'.
Right: (not a pure colour) *C.* Valya Craig 'Sutherland'.

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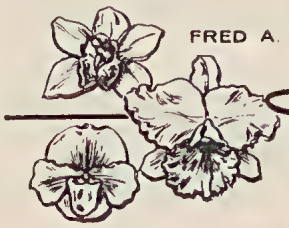
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Where Parentage Counts!

Mailing list No. 4 is just out. It covers a wide range of Cymbidium flasks, seedlings, mericlones, Paphiopedilum divisions and notes on hybridising and flasking.

Tetraploid Cymbidiums have been handicapped by lack of spread in flowering time and colour intensity. This also limits the triploid crosses. This could only be corrected by taking time to develop high class early tetraploids. Typical of the fine standard of our early tetraploid parents are:

SYLVANIA 'SONNET'. Large, soft pink, beautiful show form early July bloom with 1 5/8" petals. Developed at this nursery the first plant to leave is going overseas by request with show presentation in mind. There was exciting potential in the first of its seedlings to flower last season.

ARCADIAN MELODY 'HARVEST MOON'. Large beautiful show form July bloom showing the yellow from its Irish Melody parent. This clone competed twice for the first time in 1973 and won both times, gaining Best Cymbidium Parramatta Winter Show and first in Cymbidiums at July meeting of N.S.W.O.S. where the third place better gained an H.C.C.

WHITE CHRISTMAS 'SNOWDRIFT'. Beautiful white with rare proven May flowering time. This clone is sought by major overseas companies.

As outstanding new parents are gained they add to the fine list of parents. This list sees the addition of the aesthetically beautiful Palomar x Stanley Fourakers with their perfect spike habit.

The diploids have been handicapped by lack of form and substance. Typical of the development work done at this nursery is **ZUMA BOYD 'MAGNIFICENT'** which has 1½" petals and perfect form and substance. This is just one of the many fine Zuma Boyds which originated from our cross made in 1961. The first Zuma Boyd 'Magnificent' crosses appear in the list.

Another dimension in Cymbidiums is added with the work being done with the Albinos where the significance of the work from our **SLEEPING BEAUTY, SLEEPING SONNET, SLEEPING GLOW** and **SLEEPING PRINCESS** crosses is in the process of being realised. The pure white **PHARAOHS** developed from the Sleeping Beauty's appear as parents for the first time.

The mailing list is one which brings change and new standards. Because of the newly available breeding clones two more dimensions are possible. This list sees the first of a series of **COLOUR INTENSE TETRAPLOID** crosses and crosses made to yield **GREAT AESTHETIC BEAUTY.**

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MARCH, 1974 VOLUME 39 No. 1

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Prize winning pure coloured cymbidiums (colour) .... Cover

Orchid names: A species of orchids has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

This issue is devoted to the latest developments in pure colour — or albino — cymbidium breeding. Albinos have flowers without anthocyanin red pigments, and the planned development of such strains has been pioneered in Australia. Plants in the third generation have flowered, and now a wide range of pure coloured cymbidiums are having shape and extended flowering periods bred into them. *C.* Pharoah 'Almighty' won First Prize in the Pure Colour Class at the Third Australian Conference Show — winning for Valley Orchids the prize they had donated. Mr. Dunn promptly re-donated the $100 towards the prize money for the Fourth Australian Orchid Conference at Sydney in 1975. *C.* Sleeping Dream 'Tetragold' gained Second Prize for Valley Orchids and is the first known natural tetraploid among the pure colours. The photo was taken by Mr. Ray Deane of Sydney.

ADDRESS ON CYMBIDIUMS

by MR. BASIL HODGINS,

Read at the Victorian Orchid Club Meeting, August 12, 1925

This article written fifty years ago by the Late Mr. Basil Hodgins is still fundamentally sound from a cultural point of view, and is certainly of great interest historically. It is republished as a tribute to the fiftieth anniversary of the founding of the Victorian Orchid Club, of which the late Mr. Basil Hodgins was a Foundation member. Mr. Basil Hodgins established an orchid nursery, which, in the capable hands of his son, Mr. R. Hodgins, is still a leader in the orchid world.

The cymbidium, more than any other class of orchid should appeal to the amateur just commencing to form a collection. No other orchid is more easily managed or lends itself so readily to ordinary pot-plant conditions — a fernery or shelter that will grow palms aspedistras, etc — is all that is needed, or if a glass structure is available, one with ample ventilation such as used for begonia or cineraria growing would be ideal.

My own attempts to grow these plants under the same condition as cattleyas met with anything but success — the plants grew continuously without attempting to flower, and scale, mealy-bug, etc. did their best to pull down the constitution of my plants. Realising that something was amiss I transferred them all to an open fernery and in a few months they picked up in a marked degree, so much so, that after twelve months of this treatment I am pleased to say that every plant is showing for flower — some plants in six inch pots showing two and three spikes.

Probably no plants have a greater claim for usefulness, beauty and easy culture than cymbidiums — well grown plants when not in flower have quite a graceful decorative appearance. If a cattleya or similar house is available the plants can be transferred there towards the end of Autumn and will open their blooms during July and August, when flowers are very acceptable. The long arch spikes carry anything from three and four blooms, as in the species *C. gottianum* to eighteen or twenty as in the cross *C.* Pauwelsii and its progeny. The flowers are amongst the most lasting of all orchids and will keep in good condition for six to eight weeks or even longer if conditions suit.

The present day popularity of these plants can be understood when we consider what remarkable progress has been made in the raising of hybrids of this genus. Just a few years ago our selection was limited to less than a dozen species, all more or less similar and mostly of what may be termed botanical orchids. With the advent of the pink flowering *Cym. insigne* this has all been altered and the hybridist has given us a race of plants rivalling in size and beauty the smaller cattleyas and, as before mentioned, with spikes of anything up to a couple of dozen blooms. This work is still progressing and no doubt in the next few years more remarkable results will be heard of from the big collections in England.

As with all orchids over-potting is one of the chief evils to be guarded against — to produce good blooms in quantity the plants require to be in a slightly pot-bound condition and to be supplied with water freely during the growing season. No definite time can be set apart for the general re-potting of these plants as the flowering season extends over a long period. There is no necessity for annual disturbance at the roots, but when such an operation is decided upon experience teaches that the best time to re-pot is a few weeks after flowering. Cymbidiums when in good health are always in root action and therefore give the best results when re-potting takes place as far removed as possible from the next flowering season.

A good potting mixture should consist of loam with which is incorporated a fair amount of rough fibre, a little moss, and rendered porous by the addition of broken crocks. The potting material should be prepared sometime before required and thoroughly moistened and turned at intervals. This applies to all potting materials for orchids — the extra trouble, if any, will be well repaid when it is seen how readily the new roots enter into the fresh material.

After re-potting the plants should be watered rather sparingly — a good plan is to keep them on the dry side and to keep the foliage and surroundings moist by continually damping down. The potting should be

moderately firm and space should be left below the rim of the pot for watering, also for the expansion of the large fleshy roots, which have a habit of pushing the plant up as with some palms. If the plants are grown under suitable conditions they are troubled with nothing in the way of insect pests or diseases. Red Spider is perhaps the most likely and this only when the plants are kept too dry.

Propagation can be effected by severing the back bulbs from large plants and potting singly in small pots —most of these will grow, but the process is rather slow and not worth while when the ease with which these plants can be imported is considered. They lose a large proportion of their foliage during the voyage, but soon plump up and make fresh root action.

Varieties I can recommend from personal experience with my own small collection are: C. Alexanderi, perhaps the best of all and a good collection could be made with forms of this hybrid itself. *C. gottianum,* a large flowered species, producing only three to four blooms on a spike; but these are each as large and remind one of *Lycaste Skinneri.*

C. Pauwelsii, a tall free flowering hybrid.

C. Schlegelii, free flowering and coming in various shades of brown and yellow.

Of the species, *C. lowianum, C. tracyanum* and *C. insigne,* are all attractive. The latter I must admit having failed to establish and I fancy others out here have had the same experience so far.

EULOGY FOR A FAMOUS SCIENTIST

During 1958 Professor Rolf Bolin was visiting scholar at the University of Sydney. He had achieved a world reputation for his work in marine biology and oceanography, a background seemingly far removed from orchids.

Then one day he visited Mr. Herman Slade at Manly and a few hours among the orchids there proved a watershed in his life. From then on he combined orchid hunting with his worldwide marine research expeditions, specialising in obscure species scarcely known to botanists, much less orchid hobbyists.

"I was 60 by the time I started on orchids, and now I figure I don't have time for anything else," Dr. Bolin said in late 1971 at his Hatton Fields, California home among thousands of orchids in greenhouses constructed by himself.

Dr. Bolin shared his knowledge and his orchids generously. He founded the Carmel Orchid Society and was its President for many years.

Many orchid friends in Australia, and throughout the world, have been saddened to learn of his death last August. In fifteen years, beginning with a chance visit to a Sydney garden, Professor Bolin made substantial contributions to the study and the horticulture of orchids.

THIRD AUSTRALIAN ORCHID CONFERENCE

Thoughts from a Queenslander

PHYL COTTON

A week of activity in Adelaide — 23rd to 29th September, 1973 — The 3rd Australian Orchid Conference — and orchid show — presenting many pleasant happenings to include in our memories of joy and laughter.

There are a number of good things that could be said about the Orchid Club of South Australia, but there is something most outstanding. The Society is blessed with a group of untiring enthusiasts who were responsible for the organisation of the wonderful Orchid Show at John Martins, for one whole week — and at the same time, seemed to be, ever on hand to assist visitors at the Conference, sight-seeing tours and the number of functions included in the schedule — the hospitality was overwhelming.

These folk deserve special recognition for the amount of work they did as volunteers in organising such a programme, which contributed to the success of the Conference.

The complete story of the ground work and detailed planning I am sure will never be made public, but the result, without a doubt has indeed been a tribute to their labours, and to the advancement of orchidology throughout Australia.

75 Arrol Street, Camp Hill, Queensland 4152

EIGHTH WORLD ORCHID CONFERENCE

Many good ideas have been brought forward with a view to making the official tour a particularly interesting one. If you have any interest in visiting a particular area or orchid establishment and you will be in the official party, please let me know so that further consideration can be given to fitting in to the itinerary the greatest possible number of places of interest. Tentatively, in broad outline, the trip will be as follows:

Sydney to Honolulu where two days sightseeing will be enjoyed, then to Frankfurt for the Conference and tours of northern Europe. Leaving Frankfurt we will travel by Rhine steamer and then connect with a coach that will be especially chartered to take us to the places of interest that we want, including orchid establishments in Holland, Belgium, France, then to England and Scotland, then to Greece and the Grecian Isles and subsequently home.

To assist me in considering the trip I have Mr. B. C. Schwartz, the Vice-President of the Council, Mr. B. Collins, the President of the Orchid Society of N.S.W. and Mr. A. B. Porter who has participated in four World Orchid Conferences already. For interested members of the party you could contact in Queensland the President of the Council, Mr. Jim Mackinney, in Victoria the Vice-President of the Council, Mr. Bill Paddock, in Tasmania Mr. Ron Mansfield, in South Australia, Mr. Syd Monkhouse and in Western Australia, Mr. George Marshall.

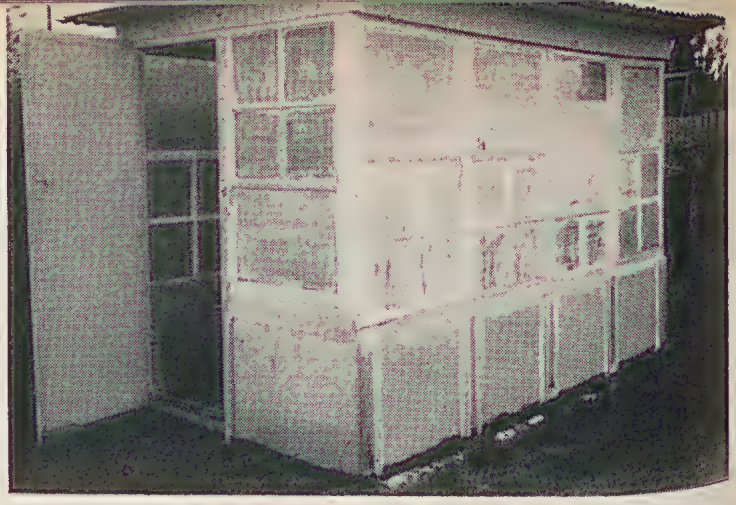
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MY FIRST YEAR WITH PHALLIES

PETE WRIGHT

Illustrations by P. Wright



The "Window Frame" Glasshouse.

It was a cold miserable day in the English winter when I stepped inside the warm house at Sanders' famous Orchid Nursery at St. Albans. The atmosphere was tropical and humid, and the place smelt green and jungly. In one corner, from between the rabbit-eared leaves of a large bush plant curved a long many-flowered spike of white blossoms. I stood entranced before the blooms which I now know to be *Phalaenopsis amabilis,* and resolved right there and then, that some day I would stand admiringly in front of my own phalaenopsis.

Some twenty years were to elapse before my dream was realised. I had at the time a small greenhouse actually built inside a larger house used for growing tomatoes. In this, I grew what used to be known as a "mixed collection" of cool-house types — a few cymbidiums, odontoglossums including *grande, Laelia anceps* and cool-growing cattleyas. Even so, the fuel bill with an electric strip heater was enormous and to grow phalaenopsis absolutely prohibitive.

To keep a house, even a small one at a minimum of 62°F. when the outside temperature in the depths of an English winter was 28° F. was a complete impossibility, unless money meant nothing as far as heating bills was concerned. In spite of enjoying moderate success with my cool-house types, the vision of that superb phalaenopsis spike was ever in my mind and alluringly (and annoyingly) before me as I mentally compared it with my three-flowered Odontoglossum Grande or un-showy *Cymbidium* Pauwelsii. Last year I decided to do something about my long-cherished ambition — the determination sparked off by a visit to the Adelaide Orchid Show. The sight of the beautiful phalaenopsis hybrids there, took me right back into Sanders' warm house of many years ago.

First of all I needed a house — Adelaide has a rotten climate for growing phallies, so I started right from scratch and consulted Mr. Merv Dunn of Valley Orchids, to whom I am indebted for his advice on the design of a glasshouse suitable for Aussie conditions. This did not solve the problem of acquiring one however. I couldn't afford a commercially constructed one to special specifications and I knew that the less I spent on the house the more I could spend on plants.

The problem was solved by a visit to a demolition yard where fittings from demolished houses were sold. There I bought six large fully-glazed windows and a stack of roofing timber for $30. I built a frame for the base of the house out of the roof timbers and to this I screwed the windows, edge to edge, one by one and down into the frame. I did not draw up any plans and since my carpentry skill is negligible I was pleasantly surprised to see the thing gradually take shape. Mr. Dunn had told me that a glass roof was unnecessary, which saved me a good deal of extra work, worry and cash, as I simply screwed on a flat roof of asbestos sheeting to three cross members made from the old roof timber I had left over from the frame. Later, I found this leaked so I covered the whole lot with old but serviceable corrugated iron slightly sloped to run off the rain. Sawing out the space for, and the fitting of a door proved the main difficulty but I finally did it and after removing a convenient fly-screen from the other end, I affixed a ventilating window which miraculously opened and shut O.K., despite my lack of skill.

The only concession to real cost was the marine ply I used to cover the outside of the base frame — the inside was done with second-hand linoleum tacked around and thickly painted. The ceiling of the house was

insulated with polyurethane foam sheeting ¾ in. thick fixed between the roof beams and all cracks and gaps (I admit to quite a few) filled with this substance. Clear plastic sheeting covering the windows inside and stuck on with contact adhesive completed the basic job.

The whole house cost no more than $70 due to use of second-hand materials and "disposal stores" stocks of screws, nails, paint, etc.

I have sited the house long wall facing north so that in summer the hot sun passing over the roof, at no time strikes the plants while in winter, the sun at a lower angle in the sky warms the house through the main glass wall. In both instances ample light for phals is admitted. I shade the east and west glass walls heavily in summer and remove it in winter. The north wall of glass is shaded only lightly with white paint, and I do not alter this either summer or winter. The south glass wall is not shaded at all. The house itself is small 6 ft. 4 in. high x 10 ft. long x 4 ft. 6 in. wide but in it I now have some fifty phalaenopses from mature plants through near-flowering size seedlings, plus thirty or so young plants from a community flat now in thumb pots. These latter are on a high shelf screwed to the windows inside.

The place is heated by a turbo-fan heater of 2,000 W but only set to "warm". I find that in winter this cuts in for five minutes in every twenty, keeping the temperature at a minimum 62° F. During the five minutes running time the temperature climbs to 70° F. then gradually falls to 62° F. in a quarter of an hour, before the cycle starts again. In summer, the temperature of a small glass-roofed greenhouse could easily climb to 110° F. + when outside temperatures are near the century but my solid roof and insulated ceiling seem to keep the place within reasonable limits.

Sometimes a long hot spell (common here in Adelaide) will necessitate misting four or five times a day — a chore left to my wife as I am away at work. But this misting, plus a gravel floor awash with water brings the temperature inside from 97°F.-100°F. rapidly down to 80° F. in two or three minutes. I always leave the door ajar, and the ventilating window even on the hottest days. On "normal" summer days the temperature never rises above 95° F.

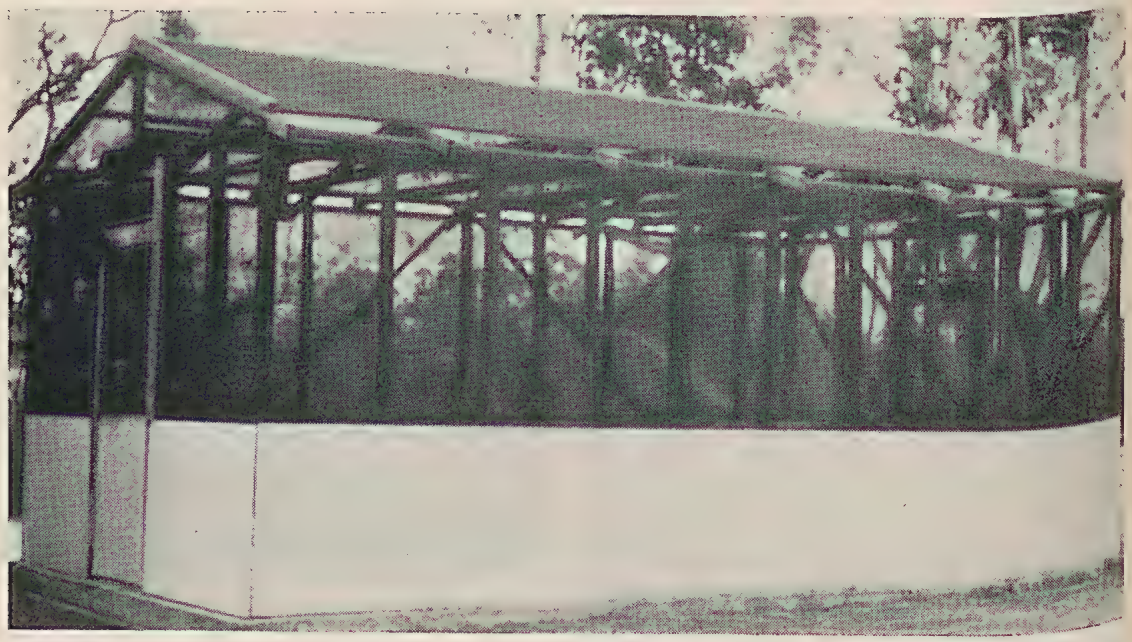


The Interior.

My plants have done remarkably well these past fourteen months, many seedlings flowering for the first time. Mature plants put up many branched spikes and not only that, as a bonus to the amateur, soon bloom again from the node below a cut stem.

They are potted in charcoal of 20 mm to 25 mm lumps and fed with fowl manure water. At the base of the pot, I always put a few large pieces of polyurethane foam and also a few pieces in with the charcoal. This substance never gets "wet" but provides air spaces that are filled with moisture, and this seems to ensure that the green growing tip of the root doesn't die off the further it goes down into the compost. As a rank amateur I was surprised at the flexibility of the phalaenopses. They can stand 40° F. for short periods, and ham-fisted heavy watering doesn't seem to worry them in charcoal. As far as excess heat is concerned, I once went fishing last summer leaving the house closed up completely. I was away five hours and on my return, was horrified to find the temperature at 115° F. I only lost one plant which, with flaccid dehydrated leaves never recovered, but the others never turned a hair which will give some idea of the resilience of phallies. To flower one's own phalaenopses is a rich pleasure indeed — when this occurs in a house one builds oneself the whole venture seems doubly worthwhile.

4 Quintus Terrace, Dover Gardens, S.A. 5048



HOUSING YOUR ORCHIDS — PART IV

A Wooden Frame Shadehouse

RONALD KERR

Where timber is plentiful and cheap a wooden frame growing house has obvious advantages. Well seasoned second-hand timber is available in some areas and frequently is better than new timber. Durability is the first requirement and therefore untreated softwoods should not be considered.

Chemically treated softwood is extremely durable but expensive. However, its virtual indestructibility makes it worth the extra cost. Among the hardwoods Ironbark and Tallowwood give the most durable results because they resist moisture. They are in short supply and dearer than other timbers.

Some timbers, such as the genus *Nothofagus* (Australian "Beech") do not weather well and are usually used for interior woodwork. If in doubt about your local timbers talk it over with your local mill or timber yard man. The timber need not be dressed and this is a big saving in cost.

The picture illustrates the simplicity of construction of a house situated near Uranga, N.S.W., right in the midst of timber country.

Note the concrete footing. Single brickwork could be used if more convenient. Except for bracing, timber of 76 mm x 51 mm is used throughout. The uprights are on 61 cm (2 ft.) centres, and the roof bearers on 92 cm (3 ft.). If the intention should be to later convert to a glasshouse then 61 cm centres should also be used on the roof.

Battens 76 mm (3 in.) x 25 mm (1 in.) are used for bracing and are mortised into the verticals. They are also used as laterals on the roof. The door frame can be made from the same timber.

Benches can be of A.R.C. mesh or of timber. Bench supports can be of 76 mm x 25 mm, with the top slats of 51 mm x 25 mm, spaced with 25 mm gaps.

DO NOT attempt to use creosote or similar mixture on the timber. It is harmful to plants over a long period, and difficult to remove or neutralise.

Fibro has been used to bench height and this aids the build-up of humidity if the floor is kept moist.

By using glazing bars and glass instead of shadecloth this type of structure can easily be converted into a glasshouse. Alternatively, clear plastic sheets can be attached with screws. If used as a glasshouse it is advisable to increase the insulation by lining the interior bottom with fibro, and the upper part with polyethylene.

Whether used as a shadehouse or a glasshouse growing conditions can be improved by using a lining of 12 mm thick polystyrene foam on the side wall exposed to the afternoon sun. This allows ample light through but reduces the heat considerably.

57 Mt. Pleasant Avenue, Normanhurst 2076

A USEFUL ONCIDIUM

BERNARD STONOR

Readers of the 1973 issues of this journal will have noticed the photographs and descriptions of two fine oncidiums, and will, I am sure, have envied the skill and patience of their fortunate owners.

Whether this genus is a little less easy to grow than some others, or whether one grower, at least, is less competent than he should be, is hard to say. A struggle has been in progress here for some years, with varying success, to grow a really good oncidium. While nothing approaching the spectacular plant of *O. flexuosum*, with its 5,600 flowers has yet turned up, there is one plant which has proved most satisfactory and I feel there may be other growers, grimly determined to grow a really showy oncidium, who might be interested to hear about it.

The plant in question is a hybrid, *Oncidium altissimum* x *O. flexuosum*. It was bought several years ago as a seedling and it was not long before it was plain that this one would at least grow. The plant has rather thin pseudobulbs, with two long narrow leaves on top, and the roots are quite thin. Growth was comparatively fast and before long there were divisions available for planting in various composts. For several years that is really all that happened. The plant grew rapidly but showed no sign of being willing to flower. Until 1973, that is, when it followed the example of those other beautiful oncidiums, in its own modest way, and decided to flower. I do not know whether there were some unusual weather conditions in that year to cause such prolific flowering, one might almost refer to 1973 as oncidium year.

The plant is growing in a 5 in. plastic pot, in a compost of pine bark, charcoal and a little leaf mould or similar type of humus. It has been kept in a house with a fibreglass roof, heated in winter to maintain a minimum night temperature of 50° F. (or 10° C. if you prefer it), with lower temperatures on a frosty night. The light, and general growing conditions are similar to those which seem to suit most cattleyas, perhaps a little drier and a little more light. As the plant appears to be making some growth for the greater part of the year there was no attempt to provide a definite rest period.

During the autumn it was clear that the plant had at last decided to flower, and about time too. First, five spikes started to emerge and these were followed a few weeks later by two more, both from the same pseudobulb. Growth during the winter was steady but very slow and it was not until early spring that the buds began to form. The scapes are thin and wiry, more or less erect, topped by the usual branching inflorescence. The first flowers opened at the beginning of September, being rather small but nicely coloured. The petals and sepals are yellow, heavily spotted and barred with red-brown and the rather rectangular labellum is a nice bright gold, measuring 18 mm wide by 15 mm long. Due perhaps to the cold dull weather



Photo: B. Stonor

Oncidium altissimum x *O. flexuosum*

at this time the flowers opened slowly, a few at a time, so that instead of the usual mass display, lasting a comparatively short time, there was a continuous show of flowers which lasted for four months. It would be hard to estimate the total number of flowers produced, but for many weeks a count of flowers actually open showed a total of 160 on the five early spikes. This total of flowers was remarkably constant, new ones opening as the first ones faded. When the first spikes were nearly over, the two late ones flowered. As the weather warmed up it proved best to move the plant to a much shadier position where the flowers lasted longer.

The plants grow freely and seem quite hardy, growing quite well on a piece of moss-covered wood in a cold glasshouse besides, in a pot with some heat supplied in winter. In my experience oncidiums had not previously shown any inclination to divide, but this hybrid is just the opposite, giving more plants than I know what to do with.

Some fertilizer was applied at intervals during the warmer months, I expect each grower has a favourite brand which suits his conditions and methods. I use what I can get, or liquid fowl manure when nothing else is available. It is a curious fact that while the stores are fairly bulging with all manner of violent poisons, suitable fertilizers are rarely seen.

So there you are, an orchid which provides a colourful show for over four months is surely worth growing even if the flowers are small, and if I can grow it successfully, well then, I think everyone else can too.

R.M.B. 46 Margaret River, W.A. 6285

ORCHID NAMES TELL A STORY

G. E. MARSHALL

First published in The Western Australian Orchid Bulletin.

One of the things that most growers find difficult when they first begin with orchids is to memorise, spell and pronounce the names of the plants in their collection.

To those used to the sort of names that are given to roses or gladioli, the names of orchids seem to be very complex. It must be remembered that all roses belong to one botanical genus (Rosa) and are hybrids bred from about 120 species of this group; whereas there are over 600 orchid genera with over 15,000 species.

Actually, the method used for naming orchids is exactly the same as is employed in all other plants. Because of the number of species, and of the enormous number of hybrids made from them, it is quite impossible to identify orchids by common names, and it is necessary to use the proper botanical terminology, and to use it accurately. When a new orchid is discovered in the wild it is carefully studied by botanists and compared with similar known plants to see if it is really distinct. If it differs from these in important structural features, it is described — in Latin — in a recognised botanical journal, and is given a Latin name as a new *species*. Latin is used because it is not the national language of any country, and because the meanings of Latin terms do not change.

If several species have particular characteristics in common they are grouped together into a *genus* (plural — genera) and this is also given a Latin name. These Latin names sometimes are a stumbling block to new growers, but they cannot be avoided and one soon becomes familiar with them. It would be much more difficult if orchids were named by their discoverers in their own national language — they were not all found by Englishmen.

It can be seen that to identify a particular orchid we must know its genus and species, although within a species there may be several slightly different forms that are called *varieties*. Thus, *Cattleya warneri* var. *alba* belongs to the genus *Cattleya,* the name of the species is *warneri,* and it is a white form of this species, alba being the Latin term for white. Note that the term "species" is the same for singular or plural; avoid using the word "specie", which, as you can see from your dictionary, means gold or silver coins and has nothing to do with plants.

The above notes refer mainly to those orchids which are found in the wild, often referred to as "native orchids". Although we grow a good many Australian native orchids, and some native orchids from other countries, the majority of orchids grown in our collections are hybrids, and have a different system of naming. There are two kinds of hybrid — those made by crossing two species of the same genus (interspecific), and those made by crossing species belonging to two different genera (intergeneric).

Intergeneric hybrids are almost entirely confined to the Orchid family, and are rare in other kinds of plants. Interspecific hybrids retain the name of the genus to which the parent species belong, but with intergeneric hybrids a new generic name is created by combining the names of the parent genera. For instance, if two *Cattleya* species are crossed the resulting hybrid still is *Cattleya,* but if a *Cattleya* is crossed with a *Laelia* the progeny all belong to the new genus *Laeliocattleya.* Similarly, the hybrid genus *Brassocattleya* is produced by crossing a *Brassevola* with a *Cattleya.* If now a *Brassocattleya* is crossed with a *Laeliocattleya,* the resulting hybrids will belong to the trigeneric hybrid genus *Brassolaeliocattleya* — usually shortened to *Blc.*

It is possible to introduce other allied genera into the hybrids of the *Cattleya* group, but this also introduces some difficulties in cultivation. When a fourth genus is used, for instance crossing a *Sopronitis* with a *Brassolaeliocattleya,* we have to give up adding the names together, and the new genus is called *Potinara.* The species *Sophronitis coccinea* has the effect of intensifying the red colour of the hybrids, but the resulting *Potinaras* are often less vigorous growers.

Similar intergeneric hybrids can be made within many other groups of orchids, not only between species of those genera, but between hybrids themselves, and it is easy

to see what an enormous number of possible hybrids could be produced, and how important it is to have hybrids named and recorded with the International Registration Authority.

When two orchids (either species or hybrids) are used as parents for a new hybrid, all the seedlings resulting from cross are said to belong to the same *grex,* and are given the same grex name. Thus when *Cattleya* Bow Bells was crossed with *Cattleya mossiae* the resulting grex was named *Cattleya* Bob Betts. Of course all the seedlings within this grex would be slightly different, some being much better than others. These selected seedlings were given by their owners additional names to distinguish them, such as *C.* Bob Betts "Glacier", *C.* Bob Betts "White Wings", etc. These are referred to as cultivars, and are much more valuable than the average seedling. Some cultivars of superior quality may receive awards from major orchid societies, the main ones being Highly Commended Certificate (HCC), Award of Merit (AM) and First Class Certificate (FCC), the last named being the highest.

Cultivars which have an Award are of course still more valued and may cost several hundred dollars. All such named or awarded orchids would have to be propagated by division, and the term *clone* is used to denote these pieces of the original plant. None of these hybrid orchids would come true from seed, and production of clones by division is a slow process, which in turn keeps up the cost.

Botanists have now perfected a method of growing the tiny tip of the new eye at the base of each cattleya bulb, on nutrient agar jelly in flasks in the laboratory, until a large mass of plant cells is formed. This is then cut up into many pieces, each of which can be grown on in the same way, and will eventually form a tiny cattleya plant which has been proved to be identical with the original clone from which the eye was taken. The original clone is left intact, except for the loss of the eye which was used to provide the original "apical meristem" as it is called. One eye can thus be persuaded to yield hundreds of *mericlones,* all of which when they reach maturity will have flowers identical with the original clone. The process is fairly slow and expensive, but because of the large yield it is possible to market these mericlones at prices within the reach of the average collector. The same procedure has been successful with some other groups of orchids, particularly cymbidiums, where many recently awarded plants are readily available to new growers at reasonable cost.

When you buy seedlings you will generally get plants of an unnamed grex. These will be identified by a "formula", e.g. *Cym.* Claudona x Sleeping Beauty. Each month in the *Orchid Review* (English) and in the *Bulletin of the American Orchid Society,* a list is published of all new registrations and grex names. When eventually you see your seedling's formula registered, you can then apply the registered grex name to your plant. If you had purchased seedlings of the formula given above, you would find in the April issue of the *Orchid Review* that it has been registered as *Cym.* Sleeping Spring, which will save you writing the full parentage on your labels.

As your plants flower, you can give each a cultivar name to distinguish it from the others and if you sell or exchange a division of any of them, the same name should accompany it. There is no registration of cultivar names, but you can only give them to seedlings when they flower, and not to plants purchased as adult divisions. It is expected that growers will only give cultivar names to their best seedlings, and in reputable nurseries a plant bearing a cultivar name could be expected to be of reasonable quality.

Unfortunately not all raisers of seedlings take the trouble to register every grex that they market, and you may never locate the name of your seedling. Of course you can take steps to register the grex yourself, but the procedure would take too long to explain here. The International Registration Authority is the Royal Horticultural Society in London, and a complete list of all hybrids ever registered is contained in Sanders List of Orchid Hybrids, which runs into several volumes. Your Orchid Society may have a set of these in its library, thus enabling you to check the name of new crosses or find the percentage of named plants you possess.

"Carradale",
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STEPS TO THE STARS

"The four basic steps to plant growth" is a very useful article for the novice grower. You'll find it in the September, 1973 issue (page 780) of the *A.O.S. Bulletin.* Mr. Clarence S. Lindsten is the author.

CYMBIDIUM ALBINO COLOUR INHERITANCE

ALVIN BRYANT

There are several points concerning the cymbidium albino development which warrant further discussion and close observation in the years to come.

The albinos are a sub-group of the concolours. They differ in that their concolour property is brought about by a genetic flaw. This causes them to behave differently in a breeding programme.

The first point is that of using a correct name so that this group can be correctly designated. In the beginning I used the word "non-staining" because I felt the most important thing was to draw attention to the property whereby the flowers were free of the brown discolouration caused by strong light. While I felt it was highly successful as a means of drawing attention to the albinos it was unsuccessful in delineating the group for shortly thereafter normal coloured cymbidiums were being referred to as non-staining. The albinos are concolours but the term concolour was unsuitable because it also covered areas of normal coloured cymbidium populations. The term I liked best was that of "pure-colours" but once again normal cymbidiums were referred to as pure colours. There was no alternative but to use a term which ensured reference was being made to an exclusive group. Terms in the nature of "anthocyanin inactive" were bulky. The genetic flaw was of the same kind that caused albinism but instead of only white flowers resulting, yellow and green forms were present because the mechanism for yellow pigmentation was unaffected as was the mechanism for chlorophyll. There seems little choice therefore but to refer to this group as albinos but in a broader sense than the word (meaning white) was usually used. It is important that one name be chosen as soon as possible to avoid looseness and confusion at a later date.

At this stage I feel there is a good awareness of the albino cymbidium but the way it contributes its colour to a breeding programme is often still not well understood. The pure, clear colour makes it tempting to cross it with a normal coloured clone in order to gain progeny with clearer colours. Nothing could be further from the truth. That lovely clear albino could well be hiding a load of dirty muddy brown splotched and red colours which could ruin every seedling it produces. One has to look at the parents of the albino and then hope the albino is carrying the nicer side of their colours. Alternatively, the hidden colours of the albino can be assessed if the albino is crossed with a normal coloured true white and the colour range noted in the progeny.

I have yet to uncover any information which can exactly place the genetic flaw which causes albinism. All that can be said is that there is somewhere, a failure in the mechanism which causes the production of anthocyanins (the red, brown, etc. pigmentation) to be present in the plant. If however, it is thought of as a mechanism then it can be thought of as a chain of operations and there only has to be a fault in one part for all the operations after that point to fail to operate. Nature usually has a way of overcoming its flaws in a simple manner. If one parent passes on a flaw to its progeny but the other parent passes on a normal equivalent then the normal equivalent not only does its own job but that of its faulty equivalent also and everything in the plant operates as if the fault never existed. It is only when both parents pass on the same flaw that observable variation occurs. With the albino the anthocyanin producing mechanism failed to operate but the mechanism is still there to be passed on to its progeny. It was not lost and as such once it is set working again it will produce its own anthocyanins to interact with the anthocyanins inherited from the other parent just as if it had never stopped at all.

The key to my statements is based on the actual observation of albino involved populations which I have made and flowered. It is the variation from what might be expected if the albino did not pass on an anthocyanin inheritance which gave the clue.

For instance Durham Castle 'Snow Princess' x Janine 'Imperial' (one an albino white and the other a normal white) produced practically no white progeny. Inexplicably however, the first few to flower were the whites. The cross was all normally coloured and mostly pinks and muddy colours. Janine 'Imperial' in other normal crosses bred almost

as a true white. There was no other explanation than that of the colour coming from Durham Castle 'Snow Princess' an albino white which had come from a background of red parentage.

The way in which the albino retains and passes on its colour inheritance can be shown in table form. For the purposes of this table it is assumed that the hypothetical parents are not throwing yellow or green flowers. It is also assumed that if the anthocyanins are not being produced the colour will be white. The tables follow the throw pattern of observed populations wherein any clone may have two mechanisms for anthocyanin production whereby (1) if both are normal the plant is normal; (2) if one is faulty the plant still functions normally; (3) if both are faulty no anthocyanins are produced and the plant is said to be albino.

Suppose two normally coloured parents, one red and one brown were crossed and each parent inherited a normal mechanism for anthocyanin production from one parent and a faulty mechanism from the other.

Let AR represent the normal mechanism in the red parent.

Let aR represent the faulty mechanism in the red parent.

Let AB represent the normal mechanism in the brown parent.

Let aB represent the faulty mechanism in the brown parent.

The result is shown in the table.

Table I

Cross	Throw	Description
ARaR x ABaB	ARAB	coloured normal
	ARaB	coloured normal
	aRAB	coloured normal
	aRaB	white albino

Now take the albino white parent gained and cross it with a true white normal coloured parent which also carries one faulty mechanism for anthocyanins.

Let AW represent the normal mechanism and aW represent the faulty mechanism.

Table II

Cross	Throw	Description
aRaB x AWaW	aRAW	normal coloured pink
	aRaW	albino white
	aBAW	normal coloured brown
	aBaW	albino white

Note that no normal coloured whites appear and yet both parents are white.

It has been assumed for the clarity of the tables that the white, red and brown colours used do not dominate so a combination of any two will produce a colour somewhere in between. The colour pattern in the table is greatly oversimplified as any Cymbidium may carry a complex of colour possibilities.

It will be noted from the table that the pattern of the flaw is following that of a simple Mendelian recessive. This is based on observed populations to date.

Through time, if any variations from the above are noted and examined, a final picture may emerge. I would suggest there are five points concerning the albinos which should be kept before us. They are

(1) Is there a more suitable name for the group?

(2) Do normal coloured parents carrying the albino factor give any hint of this other than what can be ascertained from their parentage and their progeny?

(3) Is transmission of colour inheritance through the albino as shown in the table correct?

(4) Is the appearance of albinism a true Mendelian scatter or are there variations?

(5) Do all the albinos correspond genetically? It is thought that the albino varieties do correspond genetically from work done to date. However, spontaneous albinos may have occurred in the complex hybrids. If somewhere there are two albinos which do not correspond genetically someone will eventually make a cross between them and the whole population of seedlings will be normally coloured.

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HAIL THE PURE-COLOUR CYMBIDIUM

MERV DUNN

The "Pure-Colour" cymbidium had its name confirmed and received its accolade of recognition when a separate class was established for these relatively new, but very beautiful orchids at the 3rd Australian Orchid Conference, Adelaide, 1973.

Unlike the "Miniature" and "Novelty" cymbidiums which, because of their size, need a separate class at orchid shows, the modern pure-colour cymbidium is well equipped in every department, colour, shape, size, etc., to compete with the best standard cymbidiums.

The fine display at the Conference topped by a prize in the Specimen Class, drawn from such a relatively small number of clones in cultivation, has indicated the great potential of these orchids at future shows.

Ease of culture and the big advantage that the colours will be pure and true when grown in any light intensity make pure-colours desirable orchids for all classes of growers.

"Pure-Colour" describes those cymbidium orchids that are through some genetic trait incapable of producing red pigment in any part of the plant.

Absence of red colour is most noticeable in the flowers where the normal red markings of the labellum are replaced with yellow.

However, if the breeding lines of unflowered seedlings indicate a percentage of pure-colours will be produced, it is a good indication when choosing for pure-colours from seedlings that are of at least bulb size, to select the plants that do not show any red colouring in the bulbs or leaves.

During the past two seasons big improvements have been noted in the seedling pure-colours flowering for the first time.

Of outstanding merit have been the Pharaohs made with the parents Sleeping Beauty 'Sarah Jean' and Durham Castle 'Snow Princess'. This is the only cross that has been registered using pure-colours for both parents and it is interesting to note that both the pod parent Sleeping Beauty 'Sarah Jean' and an illustrious son Pharaoh 'Almighty', both won prizes for us at the Conference Show.

A tribute to the lasting qualities of these flowers is that the plants shown at the end of September were in full flower in July and August respectively.

Students of heredity in cymbidiums will be surprised at the variation in the flowers of the Sleeping Dream clones.

An explanation of this oddity is that the cross has been made several times using several different Sleeping Beauty parents with two distinct Sleeping Glow clones.

Crosses made with yellow Sleeping Beauty parents have produced intense yellow pure-colour flowers while the white Sleeping Beauty parents produced white to ice-green flowers.

Outstanding seedlings of this grex from the 1972 and 1973 seasons have been the yellow Tetraploid, Sleeping Dream 'Tetragold', a prize winner at the Conference; Sleeping Dream 'Daffodil', winner against all comers at the August meeting O.C.S.A., and "Flower of the Month" in September, and the classical shaped Sleeping Dream 'Kings Ransom'.

To develop and improve the pure-colour strain it has been necessary to introduce to the line orchids that have desirable characteristics for colour (other than red), size, shape, substance, production and spike habits.

Unfortunately, the progeny of these crosses, even though good orchids in their own right, do not have pure-colour flowers, but they all carry the pure-colour factor so that, when crossed with a pure-colour, they will produce 50% pure-colour seedlings.

The genetic laws governing the production of pure-colours is:

if;

P = pure-colour flowers
C = coloured flowers
F = coloured flowers carrying the P factor

then;

P x C = F
P x F = P/2 + F/2
P x P = P

and

F x F = P/4 + F/2 + C/4
F x C = F/2 + C/2
C x C = C

Seedlings of several new crosses (P x C = F) flowered for the first time during the past two seasons.

All the flowers had red colouring and, in accordance with the genetic laws, all carry the pure-colour factor.

The cross, Sleeping Beauty x Claudona 'Rajah' FCC, produced several very valuable breeding plants and has been registered as Sleeping Spring. The clones Sleeping Spring 'Magnificent', green; and Sleeping Spring 'Charming', yellow; are outstanding for size and colour of flowers.

From the grex, Sleeping Valley (Sleeping Beauty x Rampur) a large (5¾ in.) green, Sleeping Valley 'Extravaganza' has already achieved fame by winning "Best Seedling" at the Orchid Club of South Australia's Winter Show, July, 1973.

Pure-Colour crosses registered in 1973 by the Royal Horticultural Society, London, with a brief description of the first clones to flower follows:

Sleeping Blossom
= Alnwick Castle x Durham Castle
Whites and yellows, 50% pure-colour.

Sleeping Dawn
= Sleeping Beauty x Sussex Dawn
Greens and yellows, 50% pure-colour.

Sleeping Delight
= Sleeping Glow x Durham Castle
Yellow pure-colours, pink coloureds, 50% pure-colour.

Sleeping Dream
= Sleeping Beauty x Sleeping Glow
Yellow and white pure-colours, pink coloureds, 50% pure colour.

Sleeping Girl
= Durham Castle x San Miguel
Coloured greens and yellows (F), no pure-colour.

Sleeping Lake
= Sleeping Beauty x San Miguel
Same as above.

Sleeping Lamb
= Sleeping Beauty x Ramesis
Yellow — no pure-colours seen yet.

Sleeping Nymph
= Sleeping Beauty x Wyanga
Green — pure-colours.

Sleeping Promise
= Sleeping Beauty x Downs Delight
Whites and ice-greens — no pure-colours seen.

Sleeping Queen
= Sleeping Beauty x Alnwick Castle
Yellows — few greens, no pure-colour, 50% F.

Sleeping Spring
= Sleeping Beauty x Claudona
Yellows, reds, greens, no pure-colour, all F.

Sleeping Valley
= Sleeping Beauty x Rampur
Yellows and greens, no pure colours, all F.

Sarah Jean
= Sleeping Beauty x Pumilum var. album.
Greens and yellows, no true pure-colours, all F.

Note If different clones are used to make the same cross the percentage of pure colour in the progeny may be different from above.

To outshine the hundreds of new pure-colours we have flowered in the past two seasons, the outstanding parent Sleeping Beauty 'Sarah Jean' x self produced last season a seedling described by prominent visitors to our nursery as the nearest yet to the perfect white cymbidium.

It carries the name Sleeping Beauty 'Valley Queen'.

The future of pure-colour cymbidiums with their glowing colours of yellow, green and white is, like their colours, very bright.

We have followed a very comprehensive programme of pure-colour hybridising to intensify and stabilise the colours, increase the lasting qualities, step up the production, improve the spike habit and keep South Australia and Australia in front with pure-colour cymbidiums.

Interesting years are ahead of us.

70 Somers Street, Brighton, S.A. 5048

FOURTH TASMANIAN ORCHID CONFERENCE

The Conference is to be held at Devonport 11th to 13th October. All Tasmanian Societies will be working hard to ensure that the Show, to take place in the Devonport Town Hall, will be the best ever staged in Tasmania. Mainland Societies are invited to send cut flower exhibits. How about State Societies discussing this at their next Committee meetings.

Three mainland personalities will be there to lecture and judge. They are Messrs. Syd Monkhouse, Russ Martin and Tom Henry.

Registration is cheap at $7 and there's a promise that the Conference tucker will be extra special. Send your money to Mrs. Aithison, 11 Boronia Avenue, Devonport 7310.

Australia leads world in pure colour



Cymbidium Araluen 'Fantasy' HCC/OSNSW. Mr. Tom Henry's awarded clone is a promising breeder. See *The Birth of Cymbidium Araluen* on page 28. Photo: A. B. Porter.



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Cymbidium Sleeping Dream 'Molten Gold'. A cross between *C.* Sleeping Beauty and *C.* Sleeping Glow. This clone first flowered in 1972 with two spikes (13, 12 flowers). Flowers were 111 mm wide.

Cymbidium Pharaoh 'Almighty'. A single flower from the florescence shown on the cover. It flowered for the Third Australian Orchid Conference Show with four spikes (16, 13, 13, 12) from two bulbs, and was awarded "Best Pure-Colour Cymbidium". Flowers 116 mm wide.



THE BIRTH OF *CYMBIDIUM* ARALUEN

A couple of pages from an amateur's Stud Book.

DUDLEY PARKER

I suggest the use of these three names for distinguishing the coloured albinos: white = albino, yellow = citrino, green = aquarino.

Experiment to produce non-striping parents, August, 1973.

Aim. To remove the anthocyanin muddiness from *C.* Sussex Dawn 'Dorothy May' progeny, and to create non-striping diploid parents, at the same time making them less susceptible to infection from orchid virus.

Theory. If the given lineage of *C.* Sussex Dawn is correct, these crosses will, or should, follow Mendel's Table 4. As Sussex Dawn is basically yellow two crosses will be needed to separate and release the yellow genes. The two pollen parents must be an albino white and a citrine yellow or concolour green.

In both crosses 50% of the progeny will, or should be, albino, citrine and concolour: the other 50% will carry Mendel's recessive quality. The natural coloured progeny will include excellent parents for the second generation crosses for returning the full colour. The seedlings from both crosses will of necessity require strong sunlight and heavy feeding.

Parents.

Sussex Dawn 'Dorothy May' Pod Parent.
President Wilson 'Concolor' Pollen No. 1.
Durham Castle 'Irene' Pollen No. 2.

The President Wilson apparently contains an errant gene which throws natural tetraploids (e.g. Dorama 'Fairfield') so this side of the progeny will require careful scrutiny, as it is the side to throw the genes I want.

Experiment. Impregnated the two spikes of Sussex Dawn on 16th August, 1963 — two pods for each spike.

Expectancy. The Durham Castle should yield from pure white through to pure yellow, with twice as many cream or pale yellow. The President Wilson cross should yield from transparent pure yellow through to water greens with twice as many golden-greens. Keep all the progeny with white labellums and yellow throats and keels, for these will be the future parents for bi-colour breeding.

Progress. All four pods plump and green Christmas 1963. Picked all four pods 16th June, 1964. All the pods are a mass of seed. 'Scope shows every seed fertile. Soaked seed in a weak sugar solution for forty-eight hours.

Seeds were flasked on Knudson's "C" and Chung "F" on the 20th June, 1964. All flasks were placed in the hot-box with thermostats at 65°F.-70°F.

Easter 1965. Opened some of the flasks and planted out into plastic trays.

I lost some of the seedlings through damp cold rainy weather. Seedlings must be soaked in Zineb solution when taken from the flasks. The albino seedlings can easily be separated from the natural colour flowers. Like sexing day-old chicks.

These diploid seedlings grow like weeds.

The President Wilson cross has thrown much stronger seedlings than the Durham Castle.

Results. The first seedling has flowered from the President Wilson cross. It is a blue-green with a white labellum, a true "aquarino" and very pretty. Two more have flowered, both "citrinos" with yellow labellums. Have called this cross Aruluen. Another "aquarino" has flowered, a top shaped apple green with white labellum. The muddiness has disappeared completely. Now we want a combination of genes to give the shape of Dorothy May in "aquarino" with a white labellum. These progeny have opened the door for the breeding of perfect "Jonquil orchids".

The other half of this experiment has been carried out by another grower, and had flowered, and been named *C.* Sleeping Beauty. The flower I saw was exactly as I expected. I am convinced already this line of breeding will produce absolutely non-striping orchids.

Phase 2 will require quite some thought but I will basically work to Mendel's laws.

Many Years Later, 1974

It is possible now to breed what I call "Jonquil orchids" — bi-colours with labellums of one pure colour super-imposed on tepal backgrounds of another pure colour.

Imagine a pure white labellum on a pure deep cadium yellow tepal field, in vital shining surface colour, reflecting the light, yet with an entirely transparent petal. Also, a green petalled flower, quite transparent, yet with a shining green surface colour, decorated with a white labellum and column.

This is an artist's dream no longer: such flowers are an absolute certainty.

These flowers have the added attraction of not changing colour in artificial light, of holding their colour until the day they die, and outlasting their colleagues by many weeks. The extraordinary lasting ability of these flowers points the way along yet another avenue that will have to be examined and expanded — the factors that make everlasting daisies possible, with their shining cellulose lacquered surfaces. What further steps do we have to take to develop this trait in cymbidiums?

To become involved with these young knights in their shining armour is to become beguiled, bewitched and thoroughly bewildered. But — wrongly partnered these same new parents become antipodal, double-edged weapons working in reverse, washing away the colour and leaving the sediment simply by rendering the wrong factors inoperative.

Imagine yellow wattle-balls floating on a muddy waterhole. Sink the mud and the yellow balls will glow by isolation and light penetrating the clear water. Now, the albinos have the clear water, and the properly selected partners have the colour genes in abundance.

Just as the colour of a paddock of ripened wheat will glow in a higher key when backlit by the sun, so albino characteristics clean the windows of the cell walls and the cytoplasm.

In short, breed to isolate the colour proteins you want and clean the tissue. This thought came to me many years ago but between the dream and the mechanical doing were many unexpected traps.

Do not dash in without checking for rips and undertows. Albino breeding is a game of genetics, not just the mating of two pretty flowers with a heart full of hope. These cymbidiums follow Mendel's laws, and if all factors of both parents are known and if the given lineage is correct then you can assess the colour proportions of the progeny.

Avoid, like the plague, any contemplated parent or partner that has in its lineage the double pollen cap fault, and the distended underbelly of the column. This is definitely an inheritable genetic fault and can throw 100% failure. It is a recurring constant which will pop up its ugly head right through the descendants.

Grow these diploids quickly, and avoid breaking the plant as long as is reasonably possible. Grow out of doors in almost full sun, they can baulk at spiking up in shady conditions, and feed quite heavily.

Cull your seedlings ruthlessly. Pick out the heroes, and do no keep any that fail to grow quickly from the word go. Burn the ones that form up into a bunch of tiny bulbs, for these are the shy and non-flowerers.

The Cell Washed "Rosinos"

My interest in albino breeding commenced through sheer cussed curiosity, and it started not with true albinos but with a pink.

Many years back I had a cymbidium called *C.* Madder Rose 'Sailor Bay' which had as its attraction translucent pink tepals. Asking the usual question: Why? I dreamed up that one of its ancestors had been hit with an albino. That started it all.

Written in my Stud Book early in the piece is this, "The secret of cleaning up the dirty sun-stripe lies with the albino. I'll bet my last shilling on it. An albino is the only force which could have produced these transparent pinks: which immediately poses the question, why did Nature produce two, a white and a green?"

Work on this red line was halted by unexpected column fault, and my waning interest with the advent of mericloning. But the thought that albinos can be used to clear the reds has always been exciting and my early experiments confirm the possibility because these crosses followed the Mendelian pattern for colour.

This "Rosino" side of the breeding game is a task for a young man with the resources of a cymbidium nursery behind him, for the choice of parents is critical. But a true red — as red as the colour in the lip — will be the final reward.

These "rosinos", when crossed with a true white tetraploid, will throw shell pink without sunstripe. Why? Because the red granules are floating free in the red diploid, but the overpowering tetraploid will cut that colour by half, and then lay that half-colour over its own white field.

Many Years Hence

To create a "rosino" from scratch take a diploid red or deepest pink, which has pure red in the lip, and pollinate it with a pure white albino. Both the parents must be free of column fault. Wait patiently for the progeny to flower, then pick out the best of the translucent petalled flowers. They may come pink to near red but the tepals have a watery look and you can almost see through them when held against sunlight.

These selected progeny can be used immediately on the pure white tetraploids for shell pinks without stain.

Now cross the two deepest coloured or best lipped "rosinos" for further cleaning of the cytoplasm. Also, make another cross with the albino parent. The red is dominant and the progeny will come more red than the original.

When you have a pure red which will come for certain, as red in tepals as the lip, cross it with a pure yellow; and golds, honey, amber and orange are another certainty.

Some of the modern paphiopedilums glow with pure colour, because, wittingly or unwittingly, they have had their cytoplasm cleaned by the repeated use of albinos until the balls of colour pigment are floating on water as clear as crystal.

Most of this data on albinos was found out the hard way over a long period of time, but coupled with the disappointments was much interest and fun — and one or two triumphs.

11 Spencer Road, Killara 2071

RECENTLY REGISTERED CROSSES

Recent isues of the *Orchid Review* record several crosses by Australian hybridisers. The largest batch is of cymbidiums from Valley Orchids of S.A. all from Flasks put down by Dr. R. Vandyke.

Cymbidium

Valley Dawn
Stanley Fouraker x Janine
Valley Flare
Ann Green x Vintage
Valley Glacier
Balkis x Mary Ann
Valley Gnome
Sussex Dawn x Snow Sprite
Valley Hope
Fred Stewart x Shiraz
Valley Lake
Balkis x Twelfth Night
Valley Star
Twelfth Night x Janine
Valley Symphony
Balkis x Arcadian Melody
Valley Tryst
Balkis x Sheba
Valley View
Fred Stewart x Rampur
Valley Wine
Sleeping Glow x Mary Ann
Valley Emerald
Pearl-Easter x San Miguel
Valley Imperial
Janine x Balkis
Valley Mayflower
Stanley Fouraker x Earlyana

A cymbidium cross of some interest has been registered by Mr. W. G. Cannons of Wayside Nursery. There were not many seedlings but many have flowered on quite small plants. The cross is:—

Evonne
Esmeralda x *suave*

Another local cymbidium cross has been registered by Mr. T. Henry:

Karen Henry
Artisan x Sussex Dawn

Other recently registered genera are:—

Brassocattleya

Oriel Nevins
Bc Lim Theng x C. Bob Betts

Registered by Mr. A. R. Nevins from a crossing by Mr. K. J. McFarlane. Mr. McFarlane registered a new dendrobium cross:—

Dendrobium

Alwyn Hill
Tangold x johannis

Oncidium

Mr. G. Hermon Slade has registered two interesting crosses in this genus:—

Lava Flow
Gardneri x crispum
Raitean Ballet
Gardneri x Sultane

ON GROUND ORCHIDS

— Mr. Bob Unsworth in the *Queensland Native Orchid Bulletin*

"Looking at an Australian terrestrial I am away into another world — a world of beauty and wonder. To some people a ground orchid is a small insignificant flower. But, if time is taken to really look into it, they would be surprised to see a flower of the most fascinating shape and colours. It takes your breath away. They are to me a miracle of unsurpassed beauty."

A HUNDRED YEARS OF ORCHID BOOKS

(Mrs.) MARY NOBLE McQUERRY
5700 Salerno Road West, Jacksonville, Florida, U.S.A. 32210

"The growing popularity of orchids, and the ever-increasing demand for information respecting them, is sufficient reason for issuing the present work."

So wrote Frederick Sander in the introduction to Volume I of *Reichenbachia* in 1888.

The statement about the growing popularity of orchids and the ever-increasing demand for information respecting them continues to this day. The hobby is worldwide in scope, both orchids and orchid growers make a ring around the world in the temperate and tropical climates, involving people of diverse ages, cultures and economic levels. And the Orchid Family of plants is so vast that none of us will ever see all of the species, let alone a fraction of the hybrids.

So, we orchid growers are readers. We have to use books to bridge the continents and learn about our plants and their habits. For even small collections are diverse.

Taking orchids as my hobby in 1939 and being a writer by profession, I set out to gather a library even as I added to my small collection of plants. Some books were found among the dust of old shops, others in attics, some in other countries. I use many of them constantly.

Among the classics in orchid books are several famous works. I mention my personal favourites.

Reichenbachia. The peculiar name honours orchid authority Dr. Heinrich Reichenbach. Frederick Sander of the Sander firm in St. Albans, England, was author and publisher. The type was set by hand in a shop at the nursery, and the paintings made of plants in flower at Sander's or in private collections.

The work was published in parts, supposedly four parts and illustrations per month. It is now generally seen in four or eight bound volumes with a total of 192 illustrations. Some plates picture more than one species or variety. *Phalaenopsis* Sanderiana (now Sanderana) and *Phalaenopsis intermedia* Portei appear on one plate that hangs in our guest room. No, we did not tear the painting from the book. But unfortunately, many of the old horticultural books have been dismembered and the colour plates sold separately.

Begun in 1886 and continued through 1894, the plates are 15 by 20 inches in size on heavy stock. My first volume (of a set divided into eight) with its heavy red leather binding, weighs 13 pounds and contains 21 plates.

Frederick Sander's comments are interesting and pertinent today. Writing about *Cypripedium (Paphiopedilum)* at the time when about fifty hybrids had been made in this genus, he suggests that "indiscriminate intercrossing of species may occasionally produce good results . . . but the finest hybrids are those which have sprung from parents possessing some good points which it has been the aim of the hybridist to blend in one plant".

It is said that *Reichenbachia* cost $400,000 to produce. The plates were painted by H. G. Moon for the most part, and are very accurate. The illustrations are chromolithographs, some with up to 20 inks.

The descriptions are in Latin. The "History and Culture" of each flower, with

Mary Noble's article on orchid books was specially written for the Third Australian Orchid Conference. New growers will find it a valuable guide, and old growers should check the list in case there are one or two books of which they are not already aware. Of course Mary Noble cannot cover all the orchid books in one article and the two most useful works on Australian natives are left out. These are *Orchids of Australia* by W. H. Nicholls, and *Australian Indigenous Orchids* by A. W. Dockrill. The former is beautifully illustrated in colour with 476 paintings by the author. It covers nearly all the terrestrial orchids and the main epiphytes. Mr. Dockrill's book has botanically accurate drawings of all the epiphytes and tropic terrestrials with accurate descriptions.

Orchids of Australia is being sold in bookshops at end-of-edition discount price. You can probably get it with a little hunting at about $14 and at this it's an absolute bargain. *Australian Indigenous Orchids* may be obtained from The Society for Growing Australian Plants, 860 Henry Lawson Drive, Picnic Point 2213, price $19, including postage.

Some of the books mentioned may be hard to obtain. Out of print ones turn up occasionally in second-hand bookshops. However, you'll be surprised how many are in orchid society libraries.

interesting asides, appears in English, French and German.

Incidentally, a fascinating biography, *Frederick Sander, The Orchid King* by Arthur Swinson published in London in 1970 reads like a novel.

Veitch's Manual of Orchidaceous Plants has been reprinted and available since 1963. Now bound in two volumes, it was produced originally in ten parts divided by genera with one part a general review, and published between 1887 and 1894.

I have a set of the originals, unimposing looking volumes with grey paper covers, each book about one-half inch thick, page size 6 x 10 inches. Black and white illustrations from woodcuts and maps with some touches of colour accompany the alphabetical text with each genus. Whether or not the collectors who discovered the plants recorded their true locations is a matter of question. Sometimes they gave false information to maintain an exclusive source for more plants.

Veitch's Manual is subtitled "Cultivated Under Glass in Great Britain", and was published by James Veitch and Sons whose nursery was in London. Some of the illustrations and maps are on fold-out pages similar to the centre spreads of current men's magazines but without the photos of the beautiful girls.

An interesting entry concerns *Phalaenopsis* Harriettae, *the first hybrid Phalaenopsis.* It was raised at Veitch's nursery, registered in 1887 and is *Phal. amabilis x Phal. violacea.* He says only one seedling survived and was sold to Erastus Corning of Albany, New York, U.S.A. and named for his daughter.

These books are useful references. My husband and I went orchid collecting in Bolivia recently. We found plants of *Phragmipedium caricinum* growing on rocks in a remote stream that proved identical to the drawing and description of *Cypripedium caricinum* in *Veitch,* our identification confirmed by Dr. Leslie A. Garay. Veitch says this species was discovered by Bridges in Bolivia, collected for Veitch by Pearce, and flowered for the first time in England in May, 1864. That it is now in flower in our greenhouse in Florida more than a century later indicates the durability and tenaciousness of the Orchid Family despite the environmental changes and the on-rushing civilisation.

The Orchid Grower's Manual by B. S. Williams was so popular that it was published in six editions beginning in 1852, each larger than the last. Son Henry Williams edited the last revised and greatly enlarged seventh edition that was published in 1894 after his father's death. It is a manual for orchid growers today for the descriptions and culture notes apply, and the drawings are useful.

Williams' Seventh, as it is called, was reprinted in 1961, so anybody can own it now.

It is worth noting that orchid insects, like the poor, are always with us. Williams mentions red spider, thrips, mealybug and scale, and says that green frogs are agile friends that eat great quantities of cockroaches and woodlice.

There are other greats: Lindenia, Bateman's books, Schlechter's *Die Orchideen* and *Select Orchidaceous Plants.*

Along an entirely different line is *The Woodlands Orchids* by a plant writer of that day, Frederick Boyle, published in London in 1901. He describes the collection of Mr. R. J. Measures, who had suffered a nervous breakdown and was advised to take "a house in the suburbs" and garden for a hobby. He tried roses and other plants without arousing his interest, but when he bought a curious plant at a sale and it turned out to be *Cypripedium barbatum,* he had found his hobby. In short order Mr. Measures had 31 greenhouses and 14 employees for his orchid collection. The *Cattleya* house was 187 feet long by 24 feet wide.

As Boyle discusses the collection, he digresses to tell tales about how certain orchids found their way into cultivation. The story of *Oncidium splendidum* says that in the 1850's a few plants arrived in France, the ship and captain not recorded so nobody knew their origin. They were divided into tiny pieces and sold at high prices (one leaf, presumably with one bulb, sold for 30 guineas), but all the pieces died.

Sander dispatched his collector, Mr. Oversluys, to Costa Rica in 1878 to look for *Oncidium splendidum.* He was guessing about the country.

Oversluys looked for it for three years. One night he sought shelter at the isolated home of a peon. The hospitality was gracious, but the Englishman was surprised to note the tender care given to a small ox in an area where animals were rarely treated humanely. But this ox was the owner's hunting companion, and Oversluys was invited to go along the next morning. As they approached grazing deer on a savannah,

Pablo ducked behind the animal with his arm around the little ox's neck and walked backwards. The animal advanced slowly, but when the deer became suspicious it paused and grazed. Pablo could see nothing. But in time he was in close range where a shot was sure.

Oversluys ran from his hiding place to help load the fallen deer onto the ox. By then the sun had risen, the mist had cleared, and he saw bright yellow flowers on curious plants all through the grassy field. It was *Oncidium splendidum!*

A most valuable book for identification is *Atlas En Couleur Des Orchidées Cultivées* by Julien Constantin. The text is in French, but about a thousand individual orchid flowers appear in colour on 30 page plates. Some are very small, but good for cursory identification. (I do not know where this book can be obtained).

Orchid Flowers: Their Pollination and Evolution by L. van der Pijl and Calaway H. Dodson (1966) makes enchanting reading while being very scientific about the curious structures of orchids designed for mimicry and deception, and the insects who pollinate them. Orchids are nature's amusement park.

For instance, the bee which comes to visit a flower of the genus *Coryanthes* is attracted by the odour, lands and scratches at the flower, only to fall into the lower portion of the lip which is shaped like a bucket and filled with water. To get out the insect must pass through a tunnel below the column, and in so doing picks up pollinia on its abdomen which it deposits on the next flower. Some *Stanhopeas* intoxicate the bee, causing it to fall through a chute, picking up pollen in the process. Some *Bulbophyllum* flowers have a mobile lip which flings a visiting fly against the column and catches it on hooks. In the struggle for freedom it dislodges the pollinia. The Australian *Pterostylis,* which you call 'greenhoods' are tricky. A small fly lands on the balanced labellum, which suddenly tips over and throws it against the stigma, imprisons it in the lower chamber so it has to go through a tunnel to escape, touching the anther. The fly appears to be intoxicated.

Various books from various continents are of interest because most of us grow orchids that come from many diverse locations. Information about habitats helps to keep plants happy in foreign greenhouses.

Beautiful Indian Orchids by B. N. Ghose (1959) describes about a hundred species found in the Darjeeling area, which is tropical but within sight of the snow on the Himalayas. But there is nothing in the book which prepares a visitor for the bone-chilling mist that descends on these orchids daily, nor the rarefied air which causes any sea-level visitor to huff and puff with every step.

A Guide to Native Australian Orchids by Roger B. Bedford (1969), which I got at the World Orchid Conference in Sydney, has one of my favourite plants acquired at the same time. *Dendrobium tetragonum,* on the jacket. Others of my personal favourites, including *Dendrobium linguiforme,* are sketched inside. It is a good reference for hobbyists in other countries.

African orchids are extremely curious and are much in vogue. *Orchids of Tropical Africa* by Joyce Stewart, a botanist, and Bob Campbell, a photographer, published in 1970 in London and New York, includes orchids of the Comores and Madagascar. It has magnificent colour photos of such species as *Angraecum leonis* and *Cymbidiella rhodochila,* and information about where the plants grow in nature and how to grow them in cultivation. The four Campbells and Stewarts, husbands and wives, made many collecting trips to gather material for the book.

From South America, five magnificent volumes titled *Venezuelan Orchids — Illustrated* by G. C. K. Dunsterville and Leslie A. Garay (published between 1959-1972) portray 800 species in colour. There are also drawings and complete descriptions along with cultural information. Not all of the orchids are limited to Venezeula. Many extend into other neighbouring countries.

Here in the United States hobbyists of long standing cut their teeth on E. A. White's *American Orchid Culture,* no longer in print. Then came Rebecca Northen's *Home Orchid Growing,* the third edition published in 1970, with much cultural and botanical information.

For species, there is Alex Hawkes' *Encyclopaedia of Cultivated Orchids* published in London in 1965. It has many descriptions and illustrations, some right out of the old English books including Veitch and Williams.

Dr. R. E. Holttum's *Flora of Malaya — Orchids* is exactly what it intends to be, "an account of all orchids, wild and cultivated, likely to be met with in Malaya". It is recommended to growers in other coun-

tries, especially for reference on *Dendrobiums* and *Vandaceous* orchids.

All of the above are mainly concerned with species. But what about hybrids which are popping out of seed pods all over the world? The only possible way to try to keep up with the trends is through periodicals, commercial catalogues and hybrid lists.

Sander's List of Orchid Hybrids, first the "main work" 1846-1945, and the subsequent Addendums through 1970 permit a hobbyist to trace the family tree of his hybrid plants. They are lists, no descriptions, of registered hybrids.

Also helpful because of illustrations, are the reports of awards. The American Orchid Society's Register of Awards 1932-1955 is not in print but the six supplements through 1968 are. From then on the A.O.S. awards have been published in the *Awards Quarterly,* which has periodical format, black and white photos, and is available by subscription.

We wish for more books like *Malayan Orchid Hybrids* by M. R. Henderson and G. H. Addison which has excellent photos, descriptions and culture notes of hybrids raised or commonly grown in Singapore. One supplement was published in 1961. Have there been more?

Now a personal note. Being a writer I wrote about what I liked best — orchids. My magazine and newspaper articles brought considerable response from people like myself who wanted elementary information.

As an experiment, without knowing if I could sell a single copy, I published *You Can Grow Orchids* by Mary Noble, a paperback so it would be inexpensive, but on slick paper so it would be pretty, and with colour illustrations, black and white, and sketches of species, hybrids and techniques. That was in 1954 and since then I have sold more than 50,000 copies all around the world. The book is in its third revised edition.

I have published two sequels, *You Can Grow Cattleya Orchids* in 1968 and *You Can Grow Phalaenopsis Orchids* in 1971. I am author, publisher and distributor of the series. My only "assistant" is my husband, Jack McQuerry, an orchidist in his own right, who helps with research and wrapping books for mailing on his time off.

Ideas for my books came from some of the other books. In the *Phalaenopsis* book are pull-out pages to show all the pests at one glance. There are colour plates of single flowers painted by Marion Ruff Sheehan to illustrate the species for identification.

If I live long enough my series may run to ten parts, like *Veitch's Manual. Paphiopedilums* and other Slipper orchids will be next, but the publication date is not set. I try to provide basic information for hobby growers, the one with his first plant or the one with hundreds.

Our hobby of growing orchids is fascinating. And the books on the library shelf are almost as intriguing as the plants in the greenhouse.

TASMANIAN ORCHID SOCIETY

Spring Show 1973

Once again the Tasmanian Orchid Society was fortunate enough to have the use of Motors Pty. Ltd. new showroom for the staging of its Spring Show.

Situated at street level with drive-in access and adequate parking it is the exhibitor's dream come true at setting-up time.

This year's show was centred round the theme "Orchids in Harmony" and the fourteen individual displays depicted various song titles. Champion display was Barry Dudman's "I've Been Everywhere, Man".

Visiting celebrity Eartha Kitt proved to be a very popular show opener and drew one of the largest crowds ever seen at an official opening.

Grand Champion went to *Lycaste* Koolena 'Tracey Kim' HCC/TOS grown and exhibited by Phyl Nicholas. Last year's runner-up Cym. Simla 'Dos Peublos' again took Reserve Champion for Jack Longden.

Devonport Show

The Devonport Orchid Society held its 2nd Annual Show in the C.W.A. Hall, Fenton Street, Devonport on 12th-13th October.

On entering the hall one was faced with orchids banked high and artistically displayed all around the hall.

A central display, featuring a huge log of wood out of which was growing Cymbidiums, carried amid other prizewinners the Grand Champion, *Cym.* Mary Ann 'Simplicity', plus a very nice Western Highland seedling flowering for the first time and these exhibited by John Cannon.

Mrs. Ruth Bartlett took Reserve honours with *Cym.* Nikkietta 'Kersbrook'. Champion Cym. for colour went to Mrs. J. Price with a clear white Balkis 'Luath'.

The popularity of miniature cymbidiums could also be seen by the numbers exhibited.

Congratulations Devonport!

BRISBANE CHARITY SHOW

The Brisbane Orchid Society are holding a Charity Orchid Show on Saturday, 6th and Sunday, 7th April, 1974. Venue is Zupp's Motor Showrooms, 1310 Logan Road, Mt. Gravatt. Non-member competitors are welcome. If you can't exhibit then come and see the Show. You'll see fine plants and help charities too.

Queensland's Disaster

It is difficult for those not affected by the terrible Queensland and northern N.S.W. floods to express their sorrow, to those who have suffered, without sounding platitudinous. Yet all Australians are deeply shocked by the extent of the disaster.

The loss of a treasured hobby may seem insignificant alongside the loss of a home or a loved one, yet this has undoubtedly happened to a wide spectrum of orchid growers. How many orchid houses have been flattened or washed away? How many previous plants have been smashed?

What pleasures of anticipation must now be frustrated! How hard will some have to work just to make their homes livable, with little opportunity for soothing relaxation among their plants — even if some have survived.

Perhaps growers in non-affected areas can do something for Societies whose members have suffered losses: They could make up a carton or two of donated plants through their own Society for despatch to a Society in a disaster area. Almost all Queensland Societies will be in this latter category.

Would Societies with members in need of such assistance send their name and address to the Editor (address on title page) and Societies offering help do the same.

Such sponsorship must be on a Society to Society basis with the recipient Society undertaking equitable distribution according to need. Plants cannot be distributed through this journal which can attempt only to match a donor Society with one whose members have lost collections.

STOLEN ORCHIDS MYSTERY

The mystery is not who stole orchids but *why* any orchid grower (we can't say orchid lover) would wish to steal plants an associate had been treasuring from the tiny seedling stage. What satisfaction can a thief feel in depriving someone he must know of the pleasure of showing friends the first flowering of an exquisite new cross. Yet just before Christmas someone did just that to at least four growers in the Newcastle area. The thief was selective and took only rare and good stock, including three plants of *Sartylis* Blue Knob from Mr. Bill Murdoch. Mr. Murdoch had had several of this cross and had generously given all except three to a few appreciative growers. Somewhere in the Newcastle area is someone who dare not bring a grower home to see his collection, and whose guilt stares from the bench every time he TRIES to enjoy his orchids.



Devastation to Orchid House by Cyclone.

Box 305,
Proserpine 4800

The Editor,

Please find enclosed a photograph showing the remains of an orchid house, which was wrecked by cyclone "Ada" on 17th January, 1970. Members of my society thought it may hold sufficient interest to be printed in the A.O.R. The story is as follows:

The owner Mrs. Allen has one arm and an invalid husband but despite these handicaps managed to build a bush house approximately 20 ft. x 15 ft. The contents were ferns, foliage with native and some hybrid orchids.

Cyclone "Ada" wrecked this and several other bush houses of our members. All bush houses, including Mrs. Allen's, have been restored. However, loss of plants were high from (i) severe bruising, (ii) plants knocked onto the ground became infected with wilt, (iii) plants near the sea were drenched with salt water, (iv) floods. Due to an absence of electricity, pressure pumps would not operate hence the orchid pots could not be flushed out. Also, there were other matters which had higher priority than the orchids.

Yours faithfully,
A. Matthews.

(Pres., Proserpine Orchid Foliage Society, 1971).

(The above happened three years ago but illustrates what must have happened in January, 1974).

Q.O.S. AUTUMN SHOW

Autumn Show of the Queensland Orchid Society is scheduled for the Brisbane City Hall from the 12th to the 14th March. Setting up to be on the 11th March.

The Autumn Show has always been the Q.O.S. main show for the year, noted for outstanding exhibits of hardcane dendrobiums, Autumn flowering cattleyas and oncidiums.

This year nature has decreed that it might not be as good as usual and growers all over Australia will sympathise with those who have suffered grievous losses in the disastrous floods.

Queensland Orchid Society needs all the help it can get for this Autumn Show. If you can — help.

GOOD BOOKS

"Beautiful Orchids"

Mr. Peter Black is well known for his long association with the famous orchid nursery of Black and Florey. The nursery is a continuation of the renowned Veitch & Sons establishment which Mr. Black's father and Mr. Florey purchased from Sir Harry Veitch in 1914.

Mr. Black is therefore exceptionally qualified to write a book on orchids. The result can be summarised as a happy combination of coffee table book, beginner's manual, historical anecdotes and keen personal observations.

A wide field is covered, beginning with an outline of the Family Orchidaceae, the life cycle, orchid collectors, propagation and ending with a section called "Orchids in the Living Room".

The author would naturally have access to the Veitch files and early records and this makes his chapter on the collectors particularly interesting.

Over one hundred illustrations are in colour, some of them quite magnificent. A few are in black and white.

This book is recommended for Society libraries, as a special gift for an orchid friend, or a special for your personal use.

"Beautiful Orchids". Published by Hamlyn and available at most Australian bookshops at about $3.95.

AMERICAN ORCHID SOCIETY

Handbook on Judging

This fifth edition of the American Orchid Society's *Handbook on Judging and Exhibition* is the consumation of over fifty years' experience and the growth of eight large regional judging panels. As such it is a must for all Australian judges and aspiring judges.

Recommended point scales are closely followed in our own A.O.C. scales, however, the Americans carry the points break-down further. For instance, Form of Flower (or what we refer to as shape) carries 30 points for all genera except *Paphiopedilum* which is allotted 40 points. This is broken up in most cases as follows:—

Form of flower	30
General form	15
Sepals	5
Petals	5
Labellum	5

No doubt Australian judges mentally work out a similar break-up, but the Americans have taken care to officially make subtle distinctions between genera. With Phalaenopsis petals are given six points and the relatively less important labellum four points. In the genus *Miltonia* the labellum has greater significance and the recommended break-up is: sepals and petals six points, labellum nine points.

The American scales include recommended break-ups for *Certificates of Cultural Merit* and *Botanical Merit*. Some scales should be of the utmost value to Australian judges because no defined equivalent exists in our own A.O.C. *Standards for Judging*. These scales are for *Groups of Plants or Cut Flowers Arranged for Effect, Educational Exhibits* and *Orchid Arrangements*. A chapter on *Criteria for Judging the Major Orchid Genera* precedes the Point Scales and reading it gives depth to the description for each genus given in our own A.O.C. Handbook.

Of major value is a chapter on *Orchid Shows and How to Run Them*. This deals with organisation, committees, judging administration, and suggestions to exhibitors.

For general reference is the title of the final chapter and it deals with such essentials as definition, nomenclature and registration of hybrids.

This valuable booklet culminates in a section *Suggestions on Orchid Photography*, and another on *Books of Interest to Judges*.

There is a copious index.

With our A.O.C. *Standards for Judging* due for reprinting it is possible that State judging panels will find some material from this American Handbook worthy of appraisement. In any case if you judge or exhibit you will need a copy.

Consists of 100 pages, size 22 cm x 15 cm Price $US2.75 including surface mail. Obtainable from American Orchid Society Inc., Botanical Museum of Harvard University, Cambridge, Mass., U.S.A. 02138.

Know your Climbers and Trailers

— Richmond E. Harrison

This Reed book is probably the only specialist work on such types of garden plants. Its value lies in the 260 colour illustrations coupled with accurate cultural information and interesting botanical details. It has ideas to brighten any garden.

Hard cover, large quarto. Recommended price $9.95.

A Bracket of Plant Books
Published by Reed

The publishing house of A. H. & A. W. Reed is now well known for a wide range of gardening and nature books and these new publications further enhance its reputation. Although not directly concerned with orchids they are of great value to the orchidist who also gardens. Additionally they contain background data on plant biology and care which can be applied to orchids.

Flowers and Plants of Western Australia

This Reed publication is a companion volume to *Flowers and Plants of Victoria* published a few years ago. It contains 538 illustrations in colour, including 37 orchids. Due to the outstanding teamwork of the four editorial collaborators the book is noteworthy for accuracy of description and the quality of its illustrations.

Rica Erickson, author of *Orchids of the West,* chaired the Editorial Committee which comprised botanist Alex George, specialist in orchids and banksias, Neville Marchant, herbarium authority on aquatic and insectivorous plants, and Michael Morcombe, photographer and naturalist.

Illustrations are mainly from the transparencies of Mr. Morcombe and Mr. George. Planning, groundwork and general co-ordination was carried out by Mrs. Erickson. The text came mainly from Mr. Marchant and Mr. George.

The authors have subdivided their State into fourteen areas according to climate, terrain and rainfall. Illustrations are grouped to show the dominant species for each area.

Eight orchid genera are represented, the main one being *Caladenia* with illustrations of seventeen species, followed by *Pterostylis* with seven. *Thelymitra* has four, and *Prasophyllum* four, *Diuris, Elythranathera* and *Eriochilus* two each. There is one species of *Cryptostylis.*

But orchids are only one per cent of the whole, and the whole is a pleasant, absorbing, lesson in the flora, geography and geology of Western Australia.

Every Westralian and every lover of native plants should have this book. Above all no visitor should go to W.A. without it.

Hard cover, 216 pages each 275 mm x 220 mm, 538 colour illustrations and two end-paper maps. Recommended price $16.95.

Plant Propagation
— by K. R. W. Hammett

Dr. Hammett is a plant pathologist who has been a keen horticulturalist since childhood, and who writes in a non-technical way for New Zealand and Australian conditions. He deals with fundamentals in easy fashion — then shows their applications.

The section on mist propagation is extremely valuable to orchid growers since this is the quickest and surest way of establishing growths from backbulbs and canes. It is also highly efficient with seedlings because they can be given more light in conjunction with automatic misting.

Appropriate photos and drawings illustrate every point. Appendix B on Composts and Appendix C on Chemical Treatment of Soils will interest the orchid grower. Recommended.

Twenty-two drawings, fifteen colour plates, eighteen photos, in 64 pages. Hard cover. Recommended retail $2.95.

Plant Training, Pruning and Tree Surgery
— K. R. W. Hammett

This book continues the good work evident in *Plant Propagation* by the same author. The first two chapters titled *What is a Plant?* and *Growth* make essential reading for anyone who grows anything.

The treatment of ornamental shrubs and fruit trees is simply explained and illustrated with photos and drawings.

If your aim is to beautify your garden with shrubs and trees which set off your orchids this is a worthwhile reference book.

Thirty-three photos, twenty colour plates, and forty-nine diagrams. Sixty-eight pages and hard cover. Recommended retail price $3.50.

UNIQUE CROSS NOT SARCORHYNCOS

More news about that famous little pink cross *Sarcochilus hartmannii* x *Rhynchostylis retusa.* Remember Mr. Herb Foote's photo in colour on page 88, June, 1973? Then on page 138, September, 1973, we published an announcement by the hybridiser Mr. Bruce Chick of Murwillumbah that registration had been applied for under the name *Sarcorhyncos* Blue Nob. The actual application was sent in by Mr. Bill Cannons of Wayside Nursery who raised a flask of the seedlings on behalf of Mr. Chick. The R.H.S. as Registering Authority has decided that the new Intergeneric Name is to be *Sartylis,* abbreviation *Srts.* Get out your notebook and make the correction now: *Sartylis* Blue Knob. For those not in the know Blue Knob is the name of a remote spur in the Macpherson Ranges famous for fine forms of *Sarcochilus hartmannii.*

CAIRNS 1973 COMBINED ORCHID SHOW

W. HUDDY



Photo: W. Huddy

"I have attended a lot of orchid shows in Australia, some much bigger, some smaller, some possibly better than this, but I can honestly say that I have never seen a show with as many different types of orchids in it as this show." So spoke the Judge, Mr. V. Winkle, Curator of the Cairns Botanical Gardens at the Combined Orchid Show at F. R. Irelands Showroom held in conjunction with "Fun in the Sun" festivities in Cairns early in October, 1973.

For the second successive year *The North Queensland Orchid Society, Cairns, Atherton Orchid Society* and *Mareeba Orchid and Pot Plant Society* gathered together the cool growing types from the tablelands and massed them with the warmer and lower altitude ones from the Cairns coastal region.

The champion orchid of the show was a large well-shaped white *C.* Esbetts, bred and raised by local grower R. Nevins. Reserve champion was won by K. McFarlane's *P.* Caruso x Juanita x Spring Showers, a long arching spray, white blooms of good shape. This plant, bred by Kev was judged third in the plant section of the Third World Orchid Conference. *D.* Impact was judged First in the dendrobium section, this plant owned by A. Wallace of Mareeba, Second was another *D.* Impact owned by K. McFarlane. A beautiful flowering plant this and is in bloom most of the year and was bred locally by Mr. McFarlane.

An Atherton Society member toured the show to count the species and listed a total of 31, some of which will be listed. The hybrids were not counted but greatly outnumbered the species. Of all the orchids in this motor showroom, which had been designed as a street scene with awnings, doorways, street lights and flower boxes, three stood out. First for colour was a basket of *Ascocentum miniatum* with its 14 erect spikes of blazing orange. Though dwarfed by the surrounding ceratobium orchid it was a large and well grown plant. The other two plants were large Australian Native specimen plant *D. johannis* with its 29 sprays to 30 inches long of golden antelope blooms, which nobody tried to count. The other a large clump of *D. canaliculatum* still growing on part of its native host also had 29 spikes of yellow, white and purple flowers. Many large plants of New Guinea type ceratobium orchids each with many sprays were sighted around the walls making a pleasing backdrop, these were loaned by Kirkwoods Orchids.

A small plant flowering and also on show for the first time was *Renanthopsis* Joy Nevins (*P.* Spring Showers x *R.* Brookie Chandler) a very pleasing golden bloom with red centre. Flowering on a very small plant these will be a show stopper on a well grown mature plant.

A corner display of some size installed by Cairns City Council Parks department showing a background wall covered with white Phalaenopsis, with a brick path meandering through foliage plants was a very pleasing contribution to this show.

Some of the species worthy of note along with their origin:— *Angraecum compactum, Deniella platystachys,* from Madagascar — *Macodes sanderana* from New Guinea — *Ascocentum miniatum* the leafless *Chiloshista lumifera, D. cariniforum, V. denisoniana, V. coerulescens* from Thailand — *D. wardianum, D. transparens* from India — *Lycaste tricolor, Maxillaria sanderana, Piscataria oderata,* Ecuador — *Calanthe elmeri, Paphiopedilum superbiens,* Philippines.

Several seldom seen Australian natives were *Vanda whiteana* from Cape York, *Dipodium ensifolium* from local coastal region and also near Herberton, *Thelymitra pauciflora Bulbophyllum johnsonii* along with two southern species *Sarcochilus hartmannii* and *S. fitzgeraldii.*

The show was held over two days with information and help given to the many interstate and overseas visitors. One such visitor who repeated "they don't grow like this in England" was lent a tripod so he could photo and show them how back home.

20 Dalton Street, Cairns.

THE ORCHID SPECIES SOCIETY

This new specialist Society is now well into its first year of lusty life. The President is Mr. H. Young, 18 Bella Vista Terrace, in the Brisbane suburb of Paddington (phone 36-1328) and Secretary Mr. D. Carnegie, 72 Chaprowe Road, The Gap (phone 30-1050). Meetings are held at the West Toowong Bowls Club at 8 p.m. on the third Wednesday of the month.

PAPUA NEW GUINEA BECKONS

The P.N.G. orchid folk promise that they have a terrific time lined up for visitors to their Second International Orchid Show to be held in Port Moresby over the weekend 4th and 5th of May, 1974.

With the experience of the First International Show as a guide this year will be bigger and more diverse. See what an emerging nation can do! See just how friendly the locals can be. Cap it with a visit in the following week to the famous Highlands Show.

On the authority of the manager of the Cairns Airport one complete plane load will be going up from Mackay. There will be visitors from Japan, New Zealand and the U.S.A. You? Write to: The Secretary, Orchid Society of Papua New Guinea, Box 4820, University, P.N.G.

A.O.C. HONOURS TWO STALWARTS

The bestowing of Honorary Fellowships is a rare mark of recognition by the Australian Orchid Council for long and devoted service to the orchid community. Two such Awards were made at the last Annual General Meeting. The Minutes record that:—

"Mr. A. B. Porter be granted an Honorary Fellowship for his outstanding service that he has devoted to the Orchid Movement in Australia generally."

"Mr. J. N. Rentoul be granted an Honorary Fellowship for his writings on Orchid Culture and his outstanding service as a Judge."

Both gentlemen have helped thousands of growers towards a better understanding of orchid culture by their lecturing and writings over a period of more than thirty years.

TOWNSVILLE ORCHID SOCIETY

At the last Annual General Meeting Mr. N. Ludwig was re-elected President. Mr. Ludwig is a very accomplished grower, and he and Mrs. Ludwig were winners of the Society Open Section Competition for the year. Mr. R. Merritt, Senior Vice-President, presented Mrs. Ludwig with the Australian Orchid Council Most Pre-Eminent Orchid Award for 1973.

At this meeting Life Membership was bestowed upon Mr. W. Griffiths for his splendid management of Society funds during the many years he has been Treasurer.

BOOKS WANTED

The Maryborough District Orchid Society is anxious to obtain 2 copies of "The Orchids", a Scientific Study by Carl Witner. Anyone able to assist is asked to contact Mrs. R. Ditchmen, Hon. Secretary, P.O. Box 389, Maryborough, Queensland 4651.

MAIL BAG

The Editor,

Out of a big bundle of Cooktown orchids, a friend of mine selected a plant, which appeared slightly more robust and had slightly longer canes on it than had the others.

The plant cost only 30c to buy and to his and my delight, it turned out to be a white "Cookie".

As far as I have been able to find out, a white "Cookie" always has a sort of yellow-pink coloured lip and the petals and sepals are white but not an "intense" white.

I have never seen, and neither have any of my friends, a white Cooktown orchid, and I mean "snow-white", with a beautiful delicate and most beautiful *green* coloured lip.

The flowers are about 4 cm across and the shape is extremely rounded and of good texture and the spike had five flowers on it.

Through this column I would like to ask the readers if they have ever heard of such an orchid and if so, would they please contact me.

Opinions of amateurs and experts will be greatly valued, and I thank everyone in anticipation.

Yours faithfully,
L. Van Croonenborg.
56 Washington Ave., Tingalpa, Brisbane Q'ld. 4173
Phone Brisbane 90-4488

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WESTFIELD'S SHOW AT TOOMBUL SHOPPING CENTRE, QUEENSLAND

For the first time, the show staged by the North Brisbane Orchid Society was held in the Mall instead of the Convention room. This was appreciated by the estimated 10,000 shoppers who viewed it, as all the displays were in island and low set and the hundreds of blooms were easily seen. Also the fountain was a picture with many prize blooms.

Champion of the Show was a well presented white phalaenopsis, 'Muriel Turner', with 27 flowers, owned by Mrs. Joan Butler. Best cattleya was a striking yellow Blc. Lemon Drop, owner Mr. D. Broughton. Mr. J. Cash won Champion Specimen orchid; Champion Australian Native with a wonderfully grown plant of Den. delicatum. This was 5 feet across and has 276 unblemished sprays — a joy to behold, showing great cultural skill. This was displayed in the fountain along with a specimen plant of Den. nobile; a well placed Phaius tancarvilliae; a large pot of white cattleyas with 16 blooms, and many more.

Altogether a treat for garden and orchid lovers alike.

FORTHCOMING SOCIAL NIGHT

The Five Dock R.S.L. Orchid Society gives advance notice of a Fraternal Night to be held on Wednesday, 24th July, at 8 p.m., to be held at the Five Dock R.S.L. Club, 66 Great North Road. Members of affiliated orchid societies are invited to attend and there will be prizes and certificates for Best Orchid of the Evening and a number of orchid classes.

Full details will be supplied in the June issue.

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CYMBIDIUMS FOR AUCTION

An Auction is to be held on Saturday, 30th March, 1974, at the premises of Mr. E. Birchall, 111 Chester Hill Road, Bass Hill, N.S.W., of approximately 1000 Orchids; Also Glass House 42' x 30' and three growing areas with shade cloth available. All constructed with galvanised pipe including easy dismantling facilities.

Please ring or write for auction list. Phone 72-1309.

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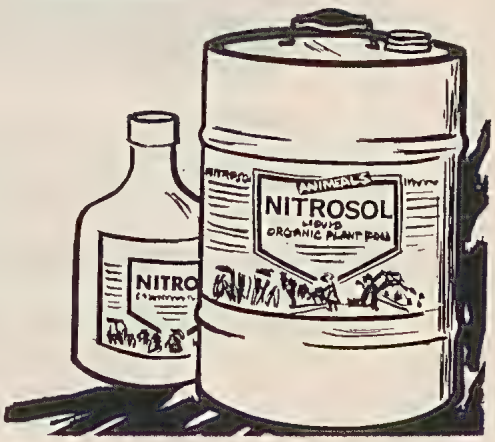
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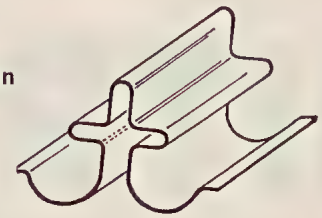
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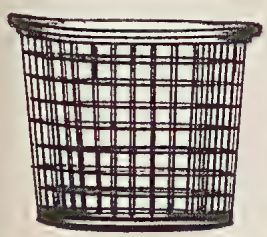
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PHAIUS AUSTRALIS VAR. BERNAYSII



Nature's delight on Queensland's Stradbroke Island

Pictured above is the delightful P. bernaysii photographed by Australian amateur naturalist Mr. Lindsay Duncan after several fruitless days searching through the clinging swamp growth on Stradbroke Island. Mr. Duncan has spent the last twenty-five years on Stradbroke Island and last September set out with the sole purpose of finding and photographing this rare beauty. His goal was only achieved after religiously quartering the island swampland for three days. On the morning of the fourth day, after rounding a large swamp mahogany, he came across the glowing yellow of twenty-seven blooms on two fully flowering stems of P. bernaysii and was stopped in his tracks by its sheer beauty, a fact that is borne out by his camera which recorded the bloom in all its glory, as shown above.

Phaius bernaysii is comparatively rare on Stradbroke Island, although there are twenty or so other native species growing on the island — mostly terrestials.

Freshwater swamps extend along most of the coast just inside the beach dunes or mangroves of the island which forms part of the eastern boundary of Moreton Bay. Along the sheltered, boggy swamp margins two varieties of Phaius grow. P. tankervilliae and P. bernaysii. Both flower from August to October.

Long, lanceolate, strongly ribbed leaves thicken at the base into pseudobulbs. The stems reach a height of 150 cm and carry eight to fifteen large pale sulphur-yellow flowers up to 10 cm in diameter, silvery white on the reverse side. The flowers of P. tankervilliae are reddish-brown with a magenta labellum.

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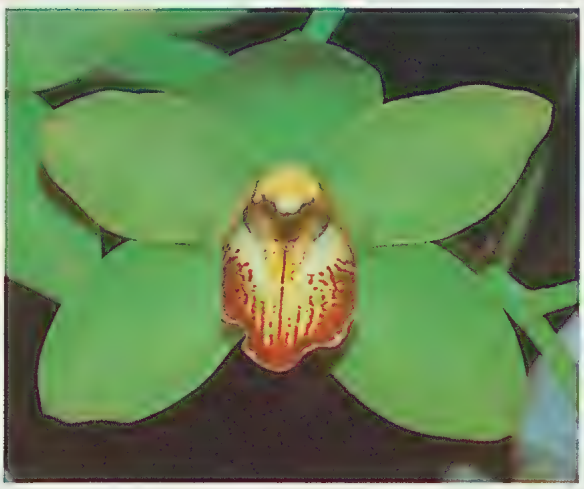
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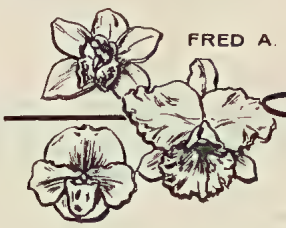
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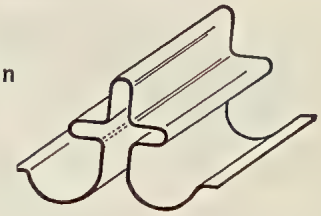
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Plants are of approximately 6 in.-8 in. leaf length.

73146 *DAWN FRAZER 'GOLDEN HIND' x ENID HAUPT*
Both of these parent plants are deep intense, non-fading yellows. The Dawn Frazer is a lovely bloom of very round, filled-in shape and lightly red dotted lip. Enid Haupt is a large flat bloom with almost concolor lip. Time of flowering July-August.

73147 *WESTERN ROSE 'TARLTON' x ETTA BARLOW 'DEL REY'*
A fine tetraploid crossing. Winner of best Decorative at 3rd Australian Orchid Conference, the Western Rose is a very round bloom of pale pink, carrying 20 flowers on a long semi-arching spike. Etta Barlow 'Del Rey' is a beautifully shaped large pale yellow with concolor lip. Flowering time should be October-November.

73148 *BLUE SMOKE 'GREEN MEADOWS' x MARY ANN 'DR. MARTIN FLOOD'*
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73149 *MARY ANN 'SIMPLICITY' AM/A.O.C. x SUSSEX DAWN 'GWENDA'*
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73150 *SUSSEX 'LAELIA SASSO' x CLARISSA 'CHELSEA'*
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73151 *RATHEL 'SUNNYLAND' x SUSSEX 'LAELIA SASSO'*
This Rathel is a deep, intense, brick-red of medium size. The influence of this with Sussex 'Laelia Sasso' will produce some vivid, showy, coloured blooms. Mainly reds, oranges and yellows.

73141 *SUSSEX MOOR 'SORRENTO' x EILEEN HINKSON*
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73152 *PEARL EASTER 'McBEANS' x ETTA BARLOW 'DEL REY'*
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Lycaste Koolena 'Tracy Kim' HCC/TOS (Colour) .... Inside Back Cover
Laelia anceps CC/TOS (Colour) .... Inside Back Cover

Orchid names: A species of orchid has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

This fine group of six *Dendrobium* Impact siblings indicates the uniformly high quality of the cross. The six were exhibited by hybridist Mr. Kevin McFarlane of Cairns at the Third Australian Orchid Conference held in Adelaide during September, 1973. One of these plants was awarded First Prize for Best Phalaenopsis Type Dendrobium. *D.* Impact is a Fourth generation cross involving the two Dendrobium sections *Phalaenopsis* and *Latouria*.

It is three-quarters *D. phalaenopsis*, with the *Latouria* influence imparting strength and vigour. The *Latouria* comes from *D.* New Guinea a cross between the species *D. macrophyllum* and *D. atroviolaceum*. *D.* New Guinea crossed with *D. phalaenopsis* produced *D.* Fiftieth State. Mr. McFarlane crossed this with a fine bicolor *D. Phalaenopsis* to produce *D.* Impact.

FABULOUS NEW HOTEL BOOKED FOR FOURTH AUSTRALIAN CONFERENCE

"ORCHIDS IN THE SOUTH PACIFIC"

A dominant new monolith on the Sydney skyline is the massive Sydney Hilton Hotel, its fluted facades reaching upwards to the 43rd floor.

It is Australia's most modern building — in fact only the bottom floors are fully operational now. By the time of the Fourth Australian Orchid Conference it will just be settling down to the luxury service routine that will make it one of the finest hotels in the world today — certainly the finest for an orchid conference.

The entire convention and exhibition floor has been booked for the Conference. This floor will house the Conference show, lecture rooms and party rooms, and of course, the Conference banquet.

For private get-togethers you may adjourn to the lovely Marble Bar, which for nearly a century was the artistic feature of the old Adams Hotel on the site of which the Sydney Hilton stands. There are numerous other little bars and bistros just handy to the Conference Centre.

Escalators serve the Centre from Pitt and George Streets. Over 500 cars can be tucked away in the basement car parks.

The Conference theme is "Orchids in the South Pacific" and Sydney is the greatest city of the South Pacific. Not only a perfect setting for what will be the most beautiful orchid show ever staged, but a city capable of stimulating your every mood. A city of theatres, scintillating lights, gay night spots, intimate landscapes and grand seascapes. A city of history too for it is the birthplace of a nation.

Only a World Orchid Conference will exceed this one in scale. Thus, it is an adventure you owe it to yourself to have, and to have it you should start to organise now. Plan your holiday break for that magic week the 14th to 20th September, 1975.

Overseas growers, this is Sydney's Springtime and an ideal time to come to Australia.

There will be tours, before, during and after the Conference. Huge orchid collections will be open to you, and specialised intimate ones too. A very experienced Hospitality Committee is arranging special treatment you would never get on an ordinary visit.

Host Society is the Orchid Society of New South Wales. This Society played Host for the very successful Sixth World Orchid Conference, and thus is very experienced in creating the conditions which will make your Fourth Australian Orchid Convention holiday a memorable one.

To get on this band-waggon put your name on the mailing list now. Informative material will be sent as it becomes available. Send your name and address to: The Fourth Australian Orchid Conference Secretary, Mrs. Maude Tyler, 29 St. George's Crescent, Drummoyne, N.S.W., Australia 2047.

EIGHTH WORLD ORCHID CONFERENCE

Less Than A Year Away

The 8th W.O.C. is from 10th April to 17th April, 1975. This period marks the start of Spring in Europe with its show of daffodils and tulips. This is the time to see European culture and scenery at its best and experience the warm hospitality of its peoples.

The German Orchid Society is Conference Host. It has more than 3,500 members in Germany and other countries. The Austrian Orchid Society and the Swiss Orchid Society with a combined membership of 800 are affiliates.

The German Orchid Society had its origins in 1906. Today members in twenty district groups meet each month for lectures, discussions, exhibitions and excursions.

Theme of the Conference is "Orchids for Everybody" so that many people will learn to love orchids better. Lectures will be simultaneously translated. There will be sound films, a scientific symposium, visits to collections and nurseries and pre-conference and post-conference tours.

An official tour is being arranged in Australia for which the cost will be approximately $2,000. For details contact Mr. W. R. Smoothey, 15 Merlin Street, Roseville, N.S.W. 2069.

Conference office address is: Seismayerstrasse 61, Palmengarten, D 6 Frankfurt (Main) 1, Germany (Federal Republic). You may register now for Conference material and full data.

CYMBIDIUM DEVELOPMENT

ALVIN BRYANT

PART I

The cymbidium is an orchid with simple cultural requirements, a superb flower life and an individual bloom to be valued singly or in combination with others on the raceme to form that blazing spectacle of colour which stops people in their tracks to admire it. It is no surprise then to see it with a place for the home gardener, the florist, the cut flower grower, the show bench enthusiast and the hybridiser.

To look deeper into the cymbidium is to realise that what has been developed to date is but a preparation for what is to come for there is a challenge to the hybridiser in its offering from its species of a wide spread in flowering times and a wealth of different characteristics.

The part I like best is the position of today's hybridiser. The cymbidium by sparingly adding its tetraploid forms over time and delaying awareness of the offering of its albino forms, has placed the most exciting period of its development in our hands. It is appropriate to methodically assess the position.

If one examines the superior cymbidium clones of today by selecting just one of each of five colour groups white, pink, yellow, green and other colours for each month of the flowering season, from May through to October, it is apparent that there are some areas where many can be nominated and others where none can be nominated.

The reason for the gaps in development was the result of various barriers. Fortunately there were no barriers in intercrossing the species. They were all diploids having a chromosone count of forty and intercrosses were fully fertile (excluding the miniatures). Other genera have not always been so fortunate. It was when the spontaneous tetraploids inevitably started to occur that the barriers arose. They were preferred parents because of the superior qualities they passed on to their progeny but their progeny were largely sterile. They were limited in number and thereby limited in the range of characteristics they possessed. They were not known to be tetraploids at the time they appeared and even today there would be many an undetected spontaneous tetraploid.

The result was inevitable. The breeding bias swung heavily to the generation of huge sterile triploid populations with diploid development being largely overshadowed so that the position today may be summarised by saying the polyploid populations of cymbidiums are limited in the spread of flowering time and colour intensity and the diploids lack form and substance.

It was a logical enough development. The cymbidium was heavily subjected to commercial incentives and it was profitable and practical to make one generation result crosses. Alexanderi 'Westonbirt' and Rosanna 'Pinkie' dominated as parents, for they offered superior form but limited number on the raceme. They were both clear whites and dominated the colour of their progeny accordingly. Pauwelsii 'Compte de Hemptine' and Babylon 'Castle Hill' had beautiful racemes but their percentage of muddy colours, furl and poor flower characteristics made crosses from them something of a liability. There was no great stretch of imagination required to see that intercrosses could be made to combine the best of form and raceme characteristics. The time factor involved is such that this line of development is still continuing. It seems that those who might have thought of using this type of breeding to gain perfect form, perfect raceme and intense colours, were discouraged because it was rare to see any progeny with any real colour.

The steady infusion of characteristics from the succession of additional spontaneous tetraploids sees us in a position today when we might well have enough material to fully develop the tetraploids even without the aid of colchicine conversion.

I have become aware that many who would like to try their hand at hybridising find difficulty in finding the basic information they require collected together for ready reference. In order to do this, it is necessary to (1) list the flowering times gained from the species (2) list the spontaneous tetraploids (3) have a check profile for plant characteristics (4) have some knowledge of individual tetraploid characteristics and what appeared in their crosses (5) examine diploid development.

Species Flowering Times

C. erythrostylum, April-May; *C. tracyanum,* late May-June-early July; *C. grandiflorum,* August; *C. insigne* and *C. lowianum,* September; *C. eburneum,* October.

Spontaneous Tetraploids

C. Alexanderi 'Westonbirt'; *C.* Pauwelsii 'Compte de Hemptine'; *C.* Rosanna 'Pinkie'; *C.* Shirley 'McBeans'; *C.* Babylon 'Castle Hill'; *C.* Babylon 'Carpentier'; *C.* Vieux Rose 'Dell Park'; *C.* Pearl Easter 'McBeans'; *C.* Dorama 'Fairfield'; *C.* Early Bird 'Pacific'; *C.* Palomar 'Snow White'; *C.* Palomar 'Denali'; *C.* Wallara 'Gold Nugget' and *C.* Irish Melody.

Intercrosses

Swallow, Balkis, Nam Kahn, Mazatlan, Shiraz, Ann Green, Western Rose, Snow Sprite, Mary Ann, Stanley Fouraker, etc.

Successive Crosses

Great Day, Joan of Arc, Etta Barlow, Pearl Balkis, Sheba, Fred Stewart, White Christmas, Arcadian Melody, Sylvania, Preview, Lila, Desiree, Elizabeth A'Logan, Poetic, Charles Darwin, Winter Fair, etc.

By adding to this list it is relatively simple with a little practice to automatically place the ploidy of a plant. Crosses between these and the diploids give triploids and the rest may be taken as diploids, although care should be taken to place descendants from *C.* Flamingo 'Nobilior', *C.* Dorchester 'Jeanette' and *C.* Dorchester 'Alpha' in a separate group.

Profiles

A clone never measures up to all the points required in its profile. That is the reason the hybridiser keeps on working. It is also impossible to fully determine its characteristics until it has been owned for a number of seasons. However, the whole basis of any breeding programme is to cross two clones with the weakness of one being the strong points of the other. It is here that the hybridiser works out how many successive crosses will be needed before he can place all the desired characteristics in the one clone.

The profile is built up by considering the blooms for size, shape, substance, colour (including the ease of flowering it to this colour and whether it fades or not), freedom from spotting and bruising. The raceme will be considered for number of blooms, whether upright, semi-arching or pendulous, whether it is strong enough to hold the blooms and whether the flowers are placed correctly without bunching or turning in. The clones will be considered for their production, vigour, flowering time and growth habit. They will be carefully inspected for signs of virus, fungal or past infection. The breeder will also need to know whether they are diploid, triploid or tetraploid. All this should not destroy the overall consideration of the suitability of the genus as a whole for the purpose with aesthetic beauty and utility covering the overall summation.

For the hybridist, the flowers clearly are not the only consideration. Nor are the visible properties of a clone. There are invisible qualities also entailed in such a word as vigour in relation to the clone. It is the ability to become aware of these invisibles which is the most difficult in long range strain development where close inter-breeding is necessary. It is certain that no one will think of everything and when a flaw appears there is no alternative but to take a step back to pick up the property lost.

The species flowering times and the list of spontaneous tetraploids should be used with the realisation that there is not complete agreement on a number of points. For instance, one form of the species *C. tracyanum* flowers in May and another at the end of June. I have omitted species such as *C. schroderi* and *C. l'ansonii* because I have had no actual contact with them. The same applies to such listed spontaneous tetraploids such as *C.* Peri 'Rogers' and *C.* Runnymede F.C.C.

One significant species not listed is *C. giganteum.* This always flowers by 17th April. It has been barely used in hybridising and obviously has been a serious omission for those wishing to bring the spread of standard cymbidiums right forward. With the sophisticated diploids now developed it is surprising that they have not been used to go back and quickly develop worthwhile *C. giganteum* based flowering time hybrids.

There is still disagreement as to whether some of the spontaneous tetraploids are in fact true tetraploids. Early Bird 'Pacific' and Dorama 'Fairfield' are two examples. There is no doubt in my mind about Early Bird 'Pacific' but occasionally irregularities in Dorama seedlings make me wonder. Some of the spontaneous tetraploids are not really 'spontaneous' for while one parent was a known tetraploid the other was one also but unrecognised as such. I remember reading once that this was the case with the Babylons.

Once a hybrid has a complex background it is impossible to be certain if it still carries properties from its species unless it evidences them either in its own characteristics or in its progeny. This is the reason breeding parents are often used most effectively once populations from them have been flowered. It is but a short step then to realise we are now up to date. I believe enough properties are present to enable them to be perfected over the full range of the flowering season. For this purpose we will see what each of the spontaneous tetraploids has shown of its properties. End of Part I.

18 Kangaroo Point Rd., Sylvania 2224

GREAT SHOW IN NEW GUINEA

The Second International Orchid Show organised by the O.S. of Papua New Guinea was still in prospect at time of going to press, and will be over at time of publication.

Many leading Australian growers had expressed their intention of being present for this outstanding event, including Messrs. J. Mackinney, W. R. Smoothey and J. Rentoul.

This is a great year for Papua New Guinea and this Show reflects its maturity.

The Conference programme included a cocktail party at Government House, an official banquet, native and Chinese dancers, bush trips, and collecting excursions.

Many registrants had the opportunity to visit other parts of Papua New Guinea in the weeks following the Show. A number planned to visit the famous highlands Show.

If you missed out this year it'll be on again in '75.

ORCHIDS AT TOURIST BUREAU

The Native Orchid Society of Queensland maintained a display of native orchids at the Queensland Government Tourist Bureau for a period of two weeks, beginning 25th March last. Plants were changed at the end of the first week.

The Bureau paid the Society to set up the display. Since this proved a very advantageous public relations exercise for both the Bureau and the Society it could be an idea for other Societies to follow. Have you a tourist bureau office or travel agent in your area who could be asked to sponsor a display by your Society? It could help your funds and attract new members.

VALE

The Tasmanian Orchid Society sadly reports the loss of its long time "father figure", Mr. David Harold Geeves. He was one of the State's first accredited orchid judges, a Committeeman for many years, and usual incumbent of the Information Table at Shows. He maintained his interest in orchids right up to the time of his death. Many friends in the orchid world mourn him.

HOUSING YOUR ORCHIDS

Due to the considerable show data and society information in this issue which cannot be held over it is regretted that the feature on orchid houses has had to be deferred.

POPULAR NEWSLETTER EDITOR RETIRES

Mr. Gerry Reid, writing in the March issue of the *Tasmanian Orchid Society Newsletter,* says "As this will be my last *Newsletter* I would like to pass on my best wishes to all Societies and their members in Australia and Overseas. Long may they prosper! I would like to welcome the incoming Editor, and to ask members to make his task as light as possible by assisting when able with articles for publication, etc."

Gerry has edited the T.O.S. Newsletter for very many years. His reporting has always been complete, accurate, easy to read and above all, lighthearted. One or two of Gerry's own excellent line drawings have appeared in each issue. These have generally been of native species, which he grows particularly well, accompanied by details of background and culture.

Highlight of the last Christmas issue was a drawing of the unique *Kega beerphorous* and its botanical description: "A caudiciforme succulent with an extremely hard and persistent bark. Closely related to the well known tumbleweed, this succulent is often noticed rolling hither and thither. The sap is rather frothy and is often taken as a tonic — this imparts a rolling action to the drinker.

"I have often tried growing these from seed, but I am afraid with little success — the flasks all seem to become dry. Flowering occurs, I suspect, when all the sap has drained; however, I have never clearly seen the flower but it is very large and rather pink. Cultivation in the ordinary glasshouse is impossible."

No wonder the Tasmanian Christmas parties are so successful! Mr. Reid is incorrect in assuming it to be a species. It is a hybrid between *Kega maltus* and *Kega yeastii* and therefore the name should be written *Kega* Beerphorous. It should not be used as a tonic prior to driving a vehicle.

Gerry is much more interested in succulents other than the above, since his collection of cacti is probably the best in Tasmania — maybe in Australia. He grows native terrestrials in a manner which does them justice, and has a useful species orchid collection too.

This editor is grateful for a memorable day with him, hunting and photographing orchids on historic Bruny Island, off windswept Stormy Bay.

Gerry Reid has worked hard for the Tasmanian Orchid Society. He deserves a break. It is certain though that he has many more years to devote to orchids, and he'll be pitching in to do a little more than his share when there's a show to put on or a function to organise.

TROPICAL QUEENSLAND ORCHID COUNCIL

This year's Annual Conference is organised, as usual, for the June Queen's Birthday holiday weekend. Bowen Orchid Society are the Hosts. A varied social and orchidaceous programme assures all registrants of a memorable weekend.

REVERSE POT CULTURE

— extract from *Darling Downs Native Orchid News*

One plant that needs special mention was the plant of *Dendrobium monophyllum* that was growing really well on a clay pot that had been turned upside down. The pot had a piece of wire through the hole in the bottom so that it could be hung up.

The Pollination of *Dendrobium Linguiforme*

DAVID L. JONES



Photo: David Cannon

Dendrobium linguiforme is a very common orchid of eastern Australia extending from southern N.S.W. northward to the south-east of Cape York Peninsula. It grows either as an epiphyte on a wide range of hosts, or as a lithophyte on rocks and cliff faces. The species is extremely drought resistant growing in a variety of situations from sea level to about 3000' altitude. Pseudobulbs are greatly reduced and replaced by thickened flat leaves which are characteristically rounded and appressed to the rhizome. The flowers are cream and spidery and are borne in showy racemes which emerge from the base of the leaf from June to December. The species exhibits little floral variation despite its large distribution. Northern forms have shorter blunter perianth segments and are recognised as the variety *nugentii*. This paper deals with the pollination of the widespread southern form *D. linguiforme* var. *linguiforme*.

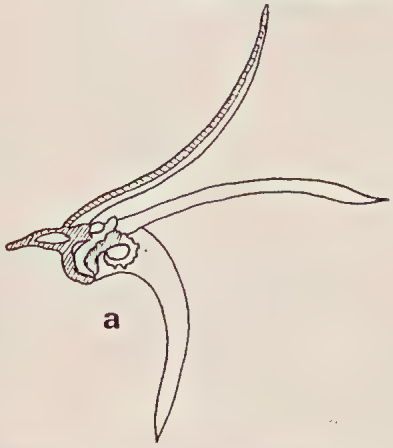
Little has been previously reported about the pollination of this orchid. Gilbert noted that the flowers were visited by a range of insects (1) These included a Hover Fly (*Syrphus viridiceps*) which he described as being very active in cross-pollination. Other visitors were small Coleoptera, Ichneumon wasps and Thynnid wasps. The orchid obviously has an efficient mechanism as shown by its wide range and abundance. Insect attraction is by means of a light pleasant perfume that is released on warm days. This becomes particularly noticeable when the temperature rises above 21°C. At close range a secondary attraction is provided by the massed flowers on the raceme and this is accentuated by the number of racemes on the plant. This secondary attraction is quite important in this species as the insect activity is greater on racemes exposed to full sunlight than on those in shade, even on very warm days. This suggests that the light itself is playing an important role even though the temperature is high enough for perfume release. The explanation is probably that the flowers are crystalline white and reflect considerable light which allows the insects to home in on the flowers after following the perfume.

An interesting flowering habit enables the orchid to spread its resources over time. Although plants usually have a concentrated flowering, odd racemes may be produced for two or three months after the peak. This seems to be particularly true of plants from cooler areas and may be an adaptation of the species to overcome the chance of cool weather during flowering. It is noticeable that these odd later racemes prove very fertile and this is probably due to warmer weather coinciding with their flowering. I have studied the pollination of this species in several localities in N.S.W. and have found it to be consistently pollinated by tiny bees

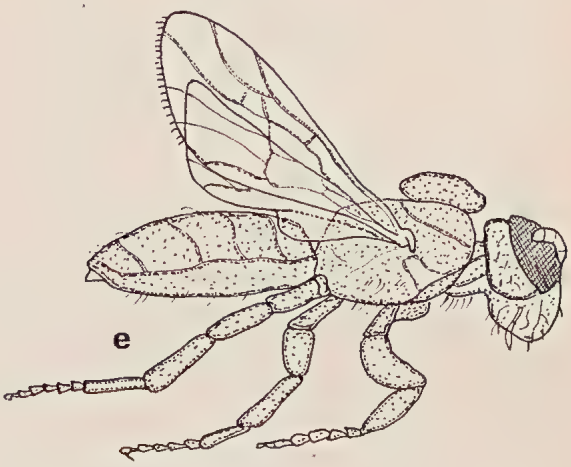
Dendrobium linguiforme

Key to Plate

The Pollinator of *Dendrobium linguiforme*



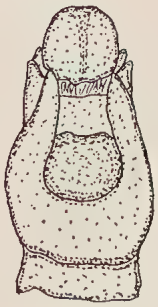
Flower — longitudinal section
1½x indicated scale



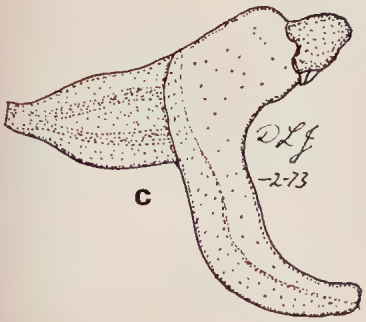
Euryglossina hypochroma
15x indicated scale



Pollinarium from above
20x indicated scale



Column from front
10x indicated scale



Column from side
10x indicated scale



of the family *Colletidae,* subfamily *Eury-glossinae.* These have been identified as belonging to two species of the genus *Eury-glossina,* namely *E. hypochroma* Cockerell and *E. lynettae* Rayment. A considerable number of specimens were collected and all were identified as females. They are tiny dark insects only about 4 mm long, usually found feeding in flowers of the family Myrtaceae. They mostly nest in the soil but some inhabit holes in old wood. *E. hypochroma* is apparently the more widespread insect of the two and is probably the important vector since its distribution coincides with that of the orchid.

The attraction inside the orchid flowers is not clear. As in other species of Dendrobium studied the flowers do not produce nectar, or at least none that is visible. The target the insect seeks seems to be the column foot or labellum as it forces itself with mouthparts extended right into the base of the flower. After a flower has been visited the insect frequently remains on the perianth actively and eagerly cleaning itself as if removing some delectable compound. The insect remains in each flower only for 10-15 seconds before walking or flying to another in the raceme or to another raceme. If a breeze is blowing the insects fly into the wind as if following a perfume trail. Pollen removal and deposition has been observed on several occasions.

The mechanism to achieve pollination is similar to that in other Dendrobiums studied. The labellum is narrow, curved and hinged to the column foot at its base. Its lateral lobes are erect forming a tunnel with the column at its top. The upper surface of the labellum has a thick raised waxy yellow callus which provides footholds for the insect and facilitates its movements in the flower. This continues towards the base of the labellum as three wavy lines which eventually straighten, with deep channels between. The highest part of the callus is to be found in the middle of the labellum just below the anther. This narrows the gap between the labellum and the column and brings the insect's thorax into close proximity with the anther. The anther cap has finger-like projections, on its anterior margin, which are angled forward and downward.

If the insect is of the right size some glue from the rostellum is smeared on its thorax as it enters the flower. On backing out the finger-like projections of the anther cap become caught on the insect's thorax. This pivots the anther cap on its hinge and neatly ejects the pollinia onto the thorax where the glue was deposited. The glue dries and cements the pollinia firmly to the insect. Deposition in the stigma is achieved when the insect tries to back out of another flower. The projecting edge of the pollinia catches on the rim of the sunken stigma and is slid in after the insect's struggles release itself. Throughout the entire process the movements of the labellum help to ensure a satisfactory end result.

The pollination of *Dendrobium liguiforme* seems to fit in well with other Australian species I have studied. Further studies in this genus will probably show similar relationships although in such a large and complex group it is highly probable that other ecological balances will be found.

The author wishes to express thanks to Dr. E. M. Exley of the University of Queensland for identification and notes on the pollinators.

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Gilbert, P. A. (1958). Dendrobium linguiforme SW. — Australian Dendrobiums.
American Orch. Soc. Bull. **27**: 472-75.

C/- Scoresby Horticultural Research Station, P.O. Box 174, Ferntree Gully 3156

BREEDING FOR COLOUR

The Editor
Sir,

In reply to some questions asked re my article "Birth of Cym. Araluen" I add. Very boardly, the principles to which I work are these:

"Separate the carotenes from the chlorophyll pigments by the use of albinos. Then make the second generations by crossing carotenes with carotenes, and the chlorophylls with chlorophylls. By doing this, the carotenes tend to colour saturate; whilst the chlorophylls tend to clarify to ice greens and cold whites.

Secondly, "Where does the mud go? The mud sinks down to the nucleus of the cell (yolk) and is held there in suspended animation, "staying put" and by so doing, rendering the parent stable. This mud is re-activated by an incoming gamete, from a wrongly selected partner, carrying the anthocyanin stain. I reiterate, the selected partners must carry Mendel's R.A.Q. (recessive albino quality).

So therefore, crossing carotene yellows with yellows, will give saturated yellows in various degrees (pumpkin-pigments) while crossings of the whites and greens will give whites and greens (water pigments).

Crossing a yellow carotenoid pigmented flower with a chlorophyllic flower will throw golden greens, in various shades proportionate to the balance of power, of the quantities of either party of pigments; or they throw creams and pale yellows at the opposite end.

Dudley Parker, 11 Spencer Rd., Killara 2071

Strictly for the Novice

PHYLLIS A. MURN

Mine is the usual story, I was given an orchid (I now know as a cymbidium) for my birthday. I was overjoyed and more by luck than good management it flowered the following year so what did I do but rush and buy more cymbids, most of them very cheaply. I didn't much care what the flowers were like — to me they were orchids. In some respects I must have been very fortunate as I now realise that none of my first plants were virused.

The following winter I had eight plants in spike all standing like soldiers in a row along a wall at my back door, and the only help I had to grow these beauties was a copy of "You Too Can Grow Orchids" by Ralph Hancock. Every month I tried to do exactly what he said, needless to say when my spikes were in flower I literally dragged everyone in to see them and this is when a whole new way of life opened up for me. One of the gentlemen viewing my gems looked me in the eye and said, "please join an orchid circle", so I took myself to the Eastwood Orchid Circle and joined.

What odd people I met, they certainly grew some very lovely flowers, but such language — what was a "paphiopedilum"! What in heavens name was an oncidium! What a weird looking plant was the one called a vanda — why the roots are coming out the middle I thought I was going to see some orchids. However, seeing I had paid my fees and being of scotch origin I went back the next month and a gentleman called A. B. Porter gave a talk and showed slides.

So the plants I had seen were different varieties of orchids, how interesting. Still the members seemed strange to say the least, one well-dressed gentleman was discussing the pros and cons of hoof and horn, he must own a dairy surely.

At the next monthly meeting I won a cattleya seedling in a raffle, I was so pleased as I now had ten cymbids and one cat in my collection. Sunday afternoons I would wander to the bowling club and watch my husband play bowls. To my surprise, one of the players in his team belonged to the Orchid Society. What a great friend he became, he gave me quite a few dendrobe aerials and one or two natives.

For my birthday my husband made me a shade house, 33% sarlon, approximately 18 ft. by 9 ft. wide, with ARC mesh, benches each side, with an aisle in the middle. The floor is black plastic covered with small river stones. This has been ideal in the summer, the water lays on the plastic and keeps moisture under the benches. On the very hot summer days I damp down under the benches.

How I now look forward to those monthly meetings, what a great gathering of intelligent people — my cymbid "Wyanga" is in bloom, how I am looking forward to showing it. My hand was shaking as I filled in my name on the novice card to place on my plant on the bench. Was I hearing things? Mrs. Murn, Second in Cymbid Section! I won the popular vote, what a nice glass the prize was. Now I started growing in earnest, my plants seem to be thriving. My culture is very simple, starting with compost which must be very open, as cymbids will not do well in a heavy compost mixture. If you buy your compost like I do, add a few ingredients yourself, such as dried twigs and leaves collected in the bush on picnics. Being a novice I always crock the bottom of the pot a little so as to have good drainage. In the summer I water nearly every day, mainly in the morning, but never after 9.00 a.m. If it has been a very hot day, I water lightly in the evening. I start fertilising late September with a weak solution of fish emulsion fortnightly. Early November, I change to weekly fertilising using Aquasol — weak again and adding formula 20 regularly. This goes on until April. If we have a wet weekend I omit the fertilising completely.

I don't have a regular routine with my spraying but when I do I make sure its done thoroughly. The two fungicides I use alternately are Benlate then Zineb. I follow the instructions on the containers and always add a little white oil, it helps the spread and keeps plants free from scale.

For insect pests I use Rogor or Malathion.

I always stake the spikes and it is well worth the effort. When the buds come through my plants are put in a shelter with a clear fibreglass roof and open front.

Another twelve months have passed and I have five more glasses to add to my collection plus a trophy won at the Local Spring Show for the best cymbidium grown by a novice. This was a seedling Balkis Luath x Dorchester 'Jeanette'. It must have been really good as an exporter rang me and wanted to buy it which put me on cloud nine.

16 Darvall Rd., Eastwood 2122

DEFLASKING CYMBIDIUMS

DUDLEY PARKER

If your seedlings are grown in old whiskey bottles, wrap a dozen sheets of wet newspaper around the bottles and break the glass with a hammer. If you used Pyrex flasks, release the plantlets with a probe and shake them out into a bowl of water. The flasks can be used year after year.

Wash as much of the agar away from the roots as you can without breaking anything.

Soak the seedlings in a solution of Zineb, a heaped teaspoon of the fungicide to a basin of tepid water. Allow to soak for twenty minutes and then lay out on a kitchen towel.

Select the largest first, and plant in a line across a square plastic seedling tray. Make the second row of the next largest, and so on until your box is filled.

By planting the heroes together they do not smother and overpower their smaller brothers.

The biggest, strongest plants do not necessarily give the prettiest flowers, but they give no troubles either. A weak seedling is always weak.

After the tray is planted, place in the bush house on the slatted bench, with a glass dome right over the tray, so that air can come up through the bench slats, but gets caught in the dome. This gives a change of air, but keeps the humidity up.

If you cannot pinch the kid's aquarium for a dome, settle for a sheet of glass resting upon three flower pots. You must use some cover, or condensation drips from the roof will kill the young seedlings.

Compost: The Wondabah cymbidium compost is as good as any. I have tried lots of different composts but find one is much the same as another: the answer is in the watering and early feeding. I recommend the Wondabah type because it is softer in texture than my own, but it matters little. But this next piece matters. To water the plastic trays, float them in a tub of water until they sink and the water is visible on the surface; then lift out and allow to drain.

The idea is to keep the leaves and the necks of the protocorms dry.

Now, do not feed until the young plants have hardened up under the dome, which takes a full four weeks. If you feed too soon, black neck is a certainty.

The first spray will be a very weak solution of fish emulsion: a week later spray again with the fish. Spray twice a week through the winter but do not wet the axils late in the day.

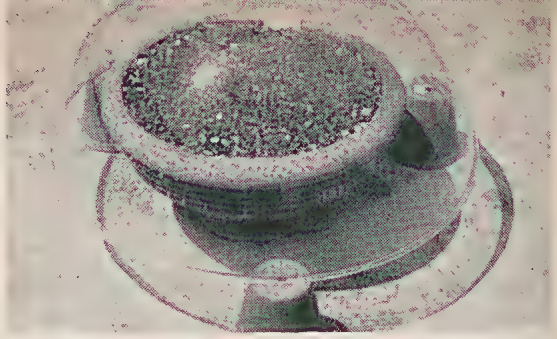


Photo: Dudley Parker

Once the seedlings send down a thick white root in the early Spring you can grow them at full pressure, which is spray fed with weak fish-emulsion early every morning. Water feed with weak Aquasol every second morning, and twice a week use a pint of water with a level teaspoon of brown sugar and two drops of Formula 20 dissolved therein. Spray this lemonade on lightly.

This forced feeding will give tremendously fast growth in the Spring and Summer, but if used in the Winter will kill instead.

Also, the sugar upsets the nitrogen carbon balance very quickly, so one must change the compost every two or three months.

As soon as these seedlings are a span high, stop the lemonade solution, and transplant from the four inch pots, directly into normal compost in eight inch pots.

By using this method, one can deflask in early Autumn, harden off during the Winter and start to force feed as soon as the willow buds break in the Spring.

If you kill some don't worry. I always grow more than I need and cull ruthlessly. By not using heat, these seedlings are born tough to be grown in a tough manner, and are quite capable of withstanding most diseases far better than their hothouse cousins.

Expect flowers three years from the flask with an odd few in two years. But remember, all animals and all plants have a built-in biological timing device which prevents premature breeding, etc. So don't try and beat the clock too much. We all need a little maturity.

Also, excessive folia feeding can create some lovely looking plants with no roots whatever. Beautiful statues with feet of clay.

Just one thing more, by spray feeding I mean a light mist spray and if ever the saying "little and often" was needed it is now. Never pot-on, always repot.

11 Spencer Rd., Killara, N.S.W.

PHALAENOPSIS

A. B. PORTER

Lecture given by M. A. B. Porter at the First Australian Orchid Conference. Held in Brisbane, 1st-15th April, 1967.

Phalaenopsis are tropical orchids whose natural habitat ranges from Burma through South East Asia, The Philippines and Indonesia to North-Eastern Australia. The typical phalaenopsis plant has large fleshy leaves alternately arranged on a rather short stem with fleshy roots and no pseudobulbs. Growth is monopodial, meaning that the same stem continues to lengthen year after year instead of making new growths annually from the base of the plant.

A few of the most spectacular species from The Philippines and Indonesia are almost exclusively the parents of the modern large pink or white hybrids, even though it may be necessary to trace the breeding back through numerous generations to arrive at species in all the branches of their pedigree.

P. Cast Iron Monarch, for example, is a fifth generation hybrid derived solely from *P. amabilis, P. amabilis* var. *rimestadiana* and *P. aphrodite.* This is also true, of course, of its very well known parents *P.* Doris and *P.* Louise Georgianna. Were it not for the use of *P. aphrodite,* early in their parentage, all three of these famous phalaenopsis would really be varieties of *P. amabilis.*

Until recent years, almost all hybrid phalaenopsis seen on the show bench or in collections were either pink or white, the best of the whites being large full flowers usually on unbranched racemes while the pinks were usually rather small but colourful and carried on much branched panicles with many flowers. The pink colour, the branching inflorescence and the mottled foliage of these pink hybrids were derived from the principal pink species *P. Schilleriana* and *P. sanderiana,* both of which lacked the substance of the good whites.

As in most orchid genera which are extensively grown commercially, polyploidy is fairly common in high quality hybrids. The naturally occurring *P. amabilis* var. *rimestadiana* is polyploid and its use as a parent had contributed polyploidy to the hybrid phalaenopsis even before it was known that polyploid orchids existed. Now, as in cymbidiums, vandas, cattleyas and other popular genera, many of the top parents are polyploid.

Considerable intercrossing has occurred between the pink and the white phalaenopsis. As a result we now have good pinks with much greater size and substance than the pink species, although they are still not plentiful. At the same time some of the good whites have some pink in their parentage with the result that one sometimes see signs of mottling in the foliage, and some show more branching in the inflorescence than the earlier white hybrids. If you look closely it is often possible to detect a tinge of pink in large white hybrids, particularly on the back of the flower. This is due to pink ancestors, perhaps several generations back in the breeding history of the particular cross.

In recent years, a great deal of work has been done in attempts to produce phalaenopsis of quality comparable with the pinks and whites but in other colours. To date, this has has not been entirely successful, but white flowers with pink lip have appeared, and there is a great deal of interest in the development of yellows. The main source of yellow colour is the small star-shaped species *P. manniii* which is yellow, strongly marked with brown. Crosses between this species and some of the good white hybrids have produced yellow flowers of much better shape than the species parent, and so also have hybrids from yellow forms of *P. lueddmanniana.* Selected clones of these yellow hybrids have been used as parents, and so the first few rungs in the ladder of fine yellow Phalaenopsis have been accomplished. Nobody has yet seen a clear yellow phalaenopsis of the size, form and substance of a top quality *P.* Doris. Perhaps nobody ever will! But so many things have been achieved in the past by the persistence of hybridists that it is reasonable to hope that time will also bring this about.

Spotting and barring are contributed by species such as *P. lueddmanniana* and *P. staurtiana* and some hybrids of good size

have been produced with attractive markings due to these species in their parentage.

The present position is, then, that really good phalaenopsis of size, form and texture have only been produced in white and various shades of pink. In the future there is the the promise of good yellows, of flowers of top quality with attractive markings of pleasing colour on the ground of white or pink and who can say what else?

Like any other orchid, the culture of phalaenopsis depends on your locality. They are esssentially tropical, and high minimum temperatures must be provided if they are to flourish. In the southern States of Australia, glasshouse culture is needed, a minimum temperature of 60° F. being desirable. Being true epiphytes they like free root run with ample access of air to the roots. Popular methods of achieving this are wooden baskets, slotted pots, shallow pans of cultivations on slabs of tree fern fibre.

When grown in containers, popular culture media are chunks of fibre, with or without admixture of broken pieces of terra cotta or charcoal, coarse fir bark alone or with shredded coarse fibre. Drainage must be perfect, but with the coarse open media generally used, this is not a problem unless old compost is allowed to rot down to mud.

Warm, moist conditions with a movement of air would describe the kind of atmosphere required, and fans are commonly used in glasshouses to maintain air circulation. These orchids will respond to heavy feeding with the usual condition that feeding and watering must be balanced to prevent accumulation of salts in the growing medium. Phalaenopsis like more shade than most of the commonly grown orchids, but the usual rule applies that heavier feeding should be accompanied by more light to allow photosynthesis to keep pace with the intake of nutrients through the roots. Otherwise, there is a risk of soft plants and poor flowering.

Stagnant air, low temperatures, and, especially, sharp falls in temperature will often cause buds to drop and leave flower spikes with gaps where there should be symmetry or in extreme cases, with no flowers at all.

A regular spraying programme should be followed to protect plant from insects and fungus diseases, and the customary requirements of cleanliness and good housekeeping will contribute to healthy plants and long-lasting flowers.

Naturally, the farther north one lives in Australia the more tropical the climate becomes and therefore the more suitable for phalaenopsis. Requirements of heated glasshouses for growing them in southern States are not valid, of course, in North Queensland, and the more nearly your natural climate approaches that of their natural habitat, the more rules you can break without serious consequences.

The name *Phalaenopsis* means "moth like" and these beautiful floral moths surely rank among the loveliest of all orchids.

The modern hybrids are grown all over the world, and as the range of colours widens, so surely will their popularity.

14 Henderson Rd., Eastwood, N.S.W.

U.S. BIOLOGIST DELIGHTS AUSTRALIANS

Rarely has an overseas orchid grower done so much for our societies as Dr. Walter F. Bertsch of the Department of Biological Sciences, Hunter College, New York. During his sojourn in this country Dr. Bertsch accepted all invitations to lecture upon his specialities, paphiopedilums and cattleyas, often travelling hundreds of miles to do so.

In his lectures Dr. Bertsch revealed a wide knowledge of orchid genealogy and culture, leavened with dry wit. His background is auspicious. He started growing orchids at the age of ten, and is a pioneer in meristem cultivation.

Mr. A. Mitchell, writing in the *Ku-ring-gai O.S. Bulletin,* has this to say about Dr. Bertsch: "In 1961 Dr. Bertsch, after extensive experimenting with the technique of meristem culture of various species of orchids joined forces with M. Marcel Lecoufle and M. Vacherot, two well known French growers, and started them on the meristem culture and clonal propagation of orchids, and I believe, is still connected with this firm as an advisor".

During his stay in Australia, Dr. Bertsch worked on photosynthesis research at Macquarie University, N.S.W.

He could be back in Australia next year. He will be very welcome. Meantime, he has promised an article for this journal.

ENJOYABLE FIELD DAY

Members of the Townsville Orchid and Allied Plants Association spent a full day in April last visiting the leading growers in Ayr, picturesque sugar town a hundred or so miles south of Townsville. North Queensland growers make a regular feature of such field days, members of a host Society hospitably sharing the pleasures of their collections with their visitors. The result is mutually enjoyable and many lasting friendships are formed.

Societies in other States could benefit from copying the Queenslanders' good example. Some N.S.W. Societies do organise bus trips to nurseries, however, the northerners visit a round of growers like themselves but generally in another town.

● A time to remember so you'll have a time you'll remember: Fourth Australian Orchid Conference time — 14th to 20th September, 1975.

Near perfection in *Phalaenopsis*

Species *Phalaenopsis* are beautiful, but hybridising from outstanding clones has produced increased texture, enhanced shape and evenly balanced florescences.

The two fine plants on the right belong to Mr. Gordon Giles of Sydney. The pink is P. Elisa, whose parents are *P.* Grace Palm x *P.* Aalsmeer Rose.

Below: P. Cabrillo Star 'Perfection', a complex sixth generation hybrid is a splendid example of the colour being bred into exhibition types.





Photos:
A. B. Porter





Betty Conroy 'Orchid Conference'

(Gladys Read x Bruce Shaffer)

The Grand Champion Orchid of the 2nd Australian Orchid Conference, Melbourne, 1971, on its first flowering.
This fine orchid has been selfed and crossed with two of our top quality white Phalaenopsis.
Betty Conroy 'Orchid Conference' x Self.
Betty Conroy 'Orchid Conference' x Anne Cavaco 'Valley High'.
Betty Conroy 'Orchid Conference' x (Vallemar x Anna Tham) 'Reynella'.

3" leaf span seedlings $3.00 each.

COLOU



SLEEPING VALLEY 'EXTRAVAGANZA'

(Sleeping Beauty x Rampur)

Above and left.
This outstanding orchid first flowered June, 1973, and "Best Seedling" of the O.C.S.A. Winter Show. Natur is in flower again this year.
The large 5⅛" flowers are of very heavy substance and lasting quality.
This is the orchid to supply the late June flower marke for the winter show benches.

Mericlone divisions in flasks of 25 plants, $50.00 per

VALLEY ORCHIDS

Valley Orchids are specialist hybridisers of Cymbidium and Phalaenopsis orchids.
Our recent show successes including the G Champion Orchid and 1st and 2nd for Phalae sis at the 2nd Australian Orchid Conferenc prizes for Cymbidiums at the 3rd Austra Orchid Conference; winners of the O.C.S yearly aggregate prizes in 1972 and 1973 for b Cymbidiums and Phalaenopsis; and many o show prizes, is your assurance of the high quality plants.

We have the largest selection of flowering Cymbidium seedlings and mericlones in Aust If the cross you are looking for is not listed in catalogue write to us with your requirement may be able to help you.

We offer healthy, disease free plants, with apologies; freight free and guaranteed deli anywhere in Australia. You are always welcom at our nurseries.

Mail Order Specialists.
Catalogue free on request.

OUR FUTURE NOW

EXCLUSIVE FIRST RELEASE



VALYA CRAIG 'SUTHERLAND'

A limited number of mericlone divisions are offered for sale by arrangement with Sutherland Orchids Pty. Ltd.

This is the orchid so much has been said about. Until now it has remained the exclusive property of its hybridist and owners whose names it carries. By every test of a good orchid; colour — production — spike habit — size — shape, etc., it rates in the top bracket. It flowers late August.

One of the few Cymbidiums that are a must for EVERY collection. The ideal show bench and commercial flower.

Single bulb plants $25.00 **Bulb and lead $30.00**

Valley Orchids

70 SOMERS STREET, BRIGHTON, S.A. 5048. PH. (08) 296-9566
NURSERY — PIMPALA ROAD, REYNELLA. PH: 381-2609



TWO EXQUISITE CLONES OF *SARCOCHILUS FALCATUS*

About three-quarters life size. Photos by Ronald Kerr.



THE ORANGE BLOSSOM ORCHID — *SARCOCHILUS FALCATUS*

ALLAN MILNE

Not a great many people realise just how variable the 'Orange Blossom' orchid is. Its flowering range commences in July and continues to November with some flowers lasting until early December, depending on the region from where the plant comes and the conditions under which it is cultured.

Sarcochilus falcatus is found from as far south as the Cann River in Eastern Victoria to the Bloomfield River in Northern Queensland. The conditions under which it grows naturally, varies from sheltered gullies beside creeks and rivers to exposed tops and sides of ridges.

In the high country such as on the Dorrigo plateau, it still grows on isolated trees scattered around in paddocks. Some of the larger clones with up to 15 to 20 growing leads would have been on their host trees prior to the clearing of the rain forests and these appear to have adapted to the exposed situation brought about by man. However, small seedling plants are in evidence on these trees which seems to indicate that the 'Orange Blossom' orchid has managed to adapt to its change in environment. Most of the plants growing in exposed positions have yellowish leaves but have flowered in profusion year after year as evidenced by the masses of old residual flower stems. Root systems ramble for yards over the bark.

The sepals and petals of *Sar. falcatus* are basically a crystalline white but on some forms there can be purple markings along the ridges on the back of sepals and petals, on the anther cap and inside the labellum. Some flowers are pure white with yellowish markings inside the back of the labellum. The size of the flowers varies from 18 mm to 60 mm in diameter with up to 12 to 14 on a raceme of a well grown plant.

Some types have their flowers compacted on the stem while others are well spaced. Flowers can be round with rounded sepals and petals while some are almost saucer shaped with no gap between these parts. Others are star shaped. The rounder more 'alba' varieties seem to flower later than the other variants.

Host trees comprise Wattles, Pittosporums, Sheoaks, Citrus and others.

The 'Orange Blossom' orchid is grown by many collectors and it responds well to cultivation. However, plants can be lost through a fungus or after being placed in either a too exposed or a too sheltered position, (i.e. under a bench) after collection and before they have had time to establish themselves. Hot dry west winds will dehydrate a plant quickly even after it has established itself.

I have collected these orchids at different times of the year and to me it does not seem to matter whether the plant is in flower, dormant or growing. I have experimented with different cultural methods with varying success.

Tree Fern Fibre Slabs

I have had good results with slabs of black tree fern fibre over which I have placed some paper bark but eventually the paper bark rots away. The roots seem to like getting in between the fibres.

Before the plants are mounted, I clip back the roots to about 20 cm from the plant, and tie the plant onto the slab with pieces of nylon stocking cut into 25 mm strips. The roots should be held by the strips firmly to the slab. I have found that it is best to have a good size piece of fibre, at least 100 mm thick as the roots will wander about growing up to 75 mm to 100 mm more a year.

One trick is to place the plants on the slab so that the fibre is the opposite way up to the way in which it was growing. This allows the water to penetrate into the middle of the slab and it will stay moist longer.

Hardwood Blocks

I have had the best results using hardwood blocks as the host but they must be old and well weathered. Best of all are those pieces which have started to rot on the surface. A solid piece 6 inches x 4 inches is preferable as it holds a fair degree of moisture. Thinner pieces nailed together provide places for slugs, etc. to gather and should not be used. A totem pole of *Sar. falcatus* can provide a most attractive display, but rather

than place one plant directly under another, try two staggered rows.

Sphagnum moss placed under the plant or roots seems to hold too much moisture and I have had plants rot as a result. Those that have survived don't seem to get a move on and remain stunted.

I have used the moss that grows in some areas with *Sar. falcatus* and this seems to stimulate growth quickly. The moss is tied on while attaching the plant, covering the roots. Again the plant and roots must be firmly anchored to the block.

Slotted Pots

Some growers have used slotted pots as the host, filled with various media using chopped-up tree fern fibre, charcoal, bark chips and rotted timber. I have not used it myself but from my observations it is not all that much of a successful method of culture. Many plants seem to succumb to a fungus from the breakdown of the media in the pot. *Sar. falcatus* being an epiphyte requires a good air circulation around its roots, especially the green growing tips through which moisture and nutriments in the air are absorbed.

Sar. falcatus seems to grow best in a cool glasshouse which provides a constant source of humidity. I have had good results in the bush house where the plants have been growing on the south-western wall, facing north-east.

Provided that the roots can be kept cool or sheltered, the plants will take plenty of full sun up to midday, but there must be an adequate source of humidity.

Weak aquasol or weak liquid fowl manure once every three weeks seems to promote good growth. My plants are watered once a day during the summer and once every three or four days during the winter.

4 Crowley Road, Berowra, N.S.W. 2081

Mr. Allan Milne is editor of the Berowra O.S. Bulletin in which the above article was first published.

THE GOLD COAST ENTERTAINS

Have you a Garden Club in your town? Then follow the recent example of The Gold Coast Orchid Society and bring them along to a meeting. A few weeks prior to entertaining members of The Gold Coast Garden Club, Miss McIlrath and Mrs. Lyons of the G.C.O.S. attended a meeting of the Garden Club and gave a short talk about those orchids which could be grown in the garden without any special housing. Judging by the questions and comments which followed the two Societies had a great deal in common in their love of beautiful flowers.

JANUARY, 1974 ON KING ISLAND

— Phil Byers in
O.S. of N.W. Tasmania Newsletter

I have, for the past month, been working on King Island. Whilst here I have had the good fortune to be stopping with Mr. and Mrs. Paul Barnett. Paul is an enthusiastic orchid grower and his wife is a very keen gardener.

These two people have to rely on a tank water supply and at times the lack of water has been so bad that the bath, wash basin and sink water has had to be kept and reused to water their plants.

Despite these hardships their garden and their orchids have continued to flourish.

We have got it made when we come inside and turn on the electric light but at Paul's there is no electricity, nor is there likely to be any, as there is only power at the towns of Currie and Grassy. The diesel engine has to be switched on so that one can use the lights at night to read or work.

It is remarkable to see the wonderful array of species orchids in Paul's converted cow shed and his vinlon covered hot house. It is also rather amazing to see all the cymbidium plants that are grown in the orchid house, especially for one who once said "I won't be growing many cymbidiums".

On the brighter side of things the pace of mainland life has not caught up with the King Islanders and with the result that a great deal of time can be spent with the orchids. Only during the first week of January was a new orchid for King Island recorded, this being *Prasophyllum flavum*, the Yellow Leek Orchid. At the same time a new fern for King Island was recorded, this being the finger fern, *Grammitis billandieri*.

There are only a few orchid growers on King Island and they have no one to sell their orchid flowers or plants to so that this is another handicap for them. The water at Currie is very hard with too much lime in it and this does not make orchid growing any easier.

Add to these the howling gales and one wonders that there are any orchids on King Island at all.

There is no orchid society on King Island but these enthusiasts manage to keep their heads well above the low water mark and they all find true delight in their orchids. Hats off to these stalwarts of the orchid world.

120 South Road, Ulverstone 7315

A PERFECT MINIATURE ORCHID

CHRIS NICHOLAS

How much simpler orchid growing would be if we could purchase epiphytic species already established on their section of host tree, just as we buy cymbidium seedlings growing in pots.

Some years back a geologist friend moved to Queensland and knowing my love of *Dendrobium canaliculatum* he collected a couple of plants whilst on a field trip and sent them down. To reduce the shock of acclimatising to Tasmanian conditions they had been left growing undisturbed on their paper bark twigs which were each about 20 cm long and 2 cm in diameter.

What a difference it made! Prior to that I had experienced difficulty in establishing bare root plants of *D. canaliculatum* onto local casuarina and paper bark. In fact, I have been a dismal failure when it comes to growing anything on paper bark, it just turns green and sours. Growth of *D. canaliculatum* on casuarina was satisfactory but not impressive.

My geologist friend's plants were small but sturdy and well established on their twigs. I grow them hanging fairly close to the glass in the heated section. Being close to the glass and well away from the heat source, winter temperatures consistently drop below 10° C., but with no adverse effect growthwise.

Flowering is affected. False flower spikes appear in the Spring but these do not develop. The main spikes come later, usually into December.

Culturally, the plants receive little attention. Whilst in active growth they are given a good soaking a couple of times a week with an occasional dose of fertilizer. When growth is completed and the cooler weather commences, watering is reduced to once in every 2-3 weeks right through until the flower spikes establish.

Mealy bugs adore the semi-terete leaf formations. They are easily controlled by dabbing the affected growths with methylated spirits. This does not harm even the newest shoots.

Like most natives *Dendrobium canaliculatum* is very generous with its flower spikes as can be seen from the accompanying illustration. However, if you like your orchids big and bold canaliculatum is not for you.



Photo: Chris Nicholas

Dendrobium canaliculatum

If, on the other hand, you can appreciate a perfect miniature orchid carrying a most appealing colour combination I would recommend *Dendrobium canaliculatum* as worthy of a prominent place in your collection.

7 Kelvin Ave., Moonah, Tas. 7009

QUINKAN NATIONAL PARK APPEAL

A sum of $64,000 is required to purchase 300 square miles of Cape York Peninsula and establish the Quinkan National Park. The area, 70 miles west of Cooktown, is rich in wildlife, orchids and aboriginal cave paintings. Five dollars would purchase about 15 acres and preserve it forever.

Donations can be sent to: "Quinkan National Park Appeal Fund", P.O. Box 33, Gordonvale, Queensland 4865. Or to: The Public Officer, Aborigines Historic Places Trust, 5 Fulton Close, Edgehill, Cairns 4870. Full information can be obtained from these sources.

Show Sydney. Exhibit at the Fourth Australian Orchid Conference Show, 14th to 20th September, 1975. Overseas entries welcome.

SECOND N.S.W. REGIONAL ORCHID CONFERENCE

Newcastle To Roll Out Red Carpet

Newcastle Orchid Society is Host Society for the Second N.S.W. Regional Conference to be held on the October holiday weekend. The precise dates are Saturday, 5th October, Sunday 6th and Monday 7th.

An attractive programme of events will ensure a stimulating weekend. This programme includes a visit to the Combined Orchid Societies' Spring Show at Kotara Fair where all the Newcastle area societies have got together to stage a mammoth show. There are seven or eight societies and some top growers so this will be really special.

That evening, after cocktails in the Supper Room of the City Hall, registrants will enjoy a Smorgasbord Dinner. This will be a glittering occasion with plenty of opportunity to mingle and talk orchids with interesting people.

On Sunday, a bus tour to Nelson Bay on beautiful Port Stephens, which includes lunch at the Nelson Bay R.S.L. Club, will cover some of the most interesting and picturesque estuary and coastline scenery in the State.

The tour finishes mid-afternoon in time for six short papers on orchids which are guaranteed to be thought provoking, and which will create a great deal of discussion.

Sunday night will be devoted to two half-hour slide shows, with plenty of time for drinks before, during interval, and after viewing. By this time you will have made many new friends and there will be plenty to talk about.

Monday morning features a vineyard tour of the famous Hunter River wine-growing areas. You will be able to taste wines and purchase if you so desire.

That's not all. You can cap your trip with a bus tour around beautiful Lake Macquarie bays and headlands. This is an experience which will definitely remove any impression you might have of Newcastle as a grimy industrial city, although you will see a bit of the industry too on the way back.

Costs work out about the same as any holiday weekend. But this is something more: a gathering of kindred spirits. Items are thrown in for free you'd never get on a conventional holiday. Ask those who went to the First Regional Conference at Port Macquarie and they'll tell you they wouldn't want to miss this one.

What It Will Cost

Registration fee. $5 each if paid before 31st July, thereafter $7 each.

Official Dinner: Smorgasbord at City Hall, $8 per head.

Bus trips. No. 1 — To Port Stephens area, including lunch, $3.50 each. No. 2 To Pokolbin Vineyards, $2 per head. No. 3 — To Lake Macquarie area, $2.00 per head.

Accommodation. Seventy rooms have been reserved for registrants at the ultra-modern Noah's Motor Inn. This motel is on the corner of Shortland Esplanade and Zaara Street. It has a dominant position overlooking Newcastle Beach and there are spectacular seascapes from all public and most private rooms. Cost for a single room is $15.10, and a double $17.55. Meals are extra. A deposit of 10% should be sent when registering to ensure a room is held for you.

How To Register

Send a letter to the Conference Secretary, Mr. N. Hellier, 17 Stanley Street, Merewether, N.S.W. 2291. Itemise: Registration fee(s), Bus trips, 1, 2 and 3. Dinner, bedroom, single or double, one or two nights (or more should you wish to stay on in Newcastle after the Conference). Send your cheque covering registration, tours, dinner and 10% of the accommodation cost with the list.

If you're in the orchid world get in the orchid whirl of social and educational events at Newcastle this October.

WARNING!

Some members have reported finding red-backed spiders during the past few weeks. Be careful lifting plastic pots as the spiders seem to favour the underside of the rim; also, never pick up a terra cotta pot by placing a finger through the hole. Spray around pots and benches with Buggeta or a similar insecticide.

Take note that the red or orange patch is not always present on red-back spiders. Their bite however, can be fatal.

Don't start poking around counting your flower spikes. Probing and squeezing won't make them grow any faster and you can do considerable damage.

Boolaroo O.S. Bulletin

Your Society can help flood victims

Make this your Society's good deed.

Many Queensland growers lost their entire collections in the disastrous floods early this year. Last issue we asked for those who knew of Societies requiring assistance to notify the editor. Two society officers have done so.

Read their stories in the letters below.

More fortunate societies can organise a good deed carton (or two) for despatch to them.

What a splendid opportunity to practice the maxim "Do unto others as you would be done by".

Help make some growers happy again.

The addresses to contact are with the letters.

104 Gordon Street,
Hawthorne, Q. 4171

The Editor,

I have read with interest your article in the March issue of A.O.R. with reference to Queensland's flood disaster and your suggestion that growers in non-affected areas may wish to do something for Societies whose members suffered losses.

Three (3) members of the Brisbane Orchid Society were affected by the floods. One had his house underwater to the ceilings and his orchid collection of 800 odd plants was completely inundated for three days. Needless to say he lost the lot, despite efforts by members of the Society to save at least some of the plants when the waters receded. Another of our older members lost most of his plants whilst one of the young junior members had all his plants, the beginnings of his collection carried away.

We have initiated moves amongst ourselves to give what help we can. Your proposal of a sponsorship on a Society to Society basis is the most welcomed by the Society and we would be most grateful for any help to assist these unfortunate people re-establish collections and so retain their interest in the orchid movement.

Any donor Society wishing to help could write to me either to the Society's postal address or my residential address shown above.

Thanks again for the personal interest you have taken in the matter and your efforts to organise assistance to those in distress.

Yours sincerely,
D. E. Garner, President.

9 Davies Street,
Oxley, Brisbane, Q. 4075

The Editor,

A note on the flood in Brisbane.

Cyclone Wanda left its mark on John Oxley District Orchid Society. Sixteen members lost all, five lost part of their collections. I was lucky as the water only entered my yard. Seeing some collections soon as the water receded was a dismal sight. The orchids were a yellow soddy mess, and the next day they were black. Vanda Type were just a mess. What seems most to survive was the Soft-wood Dendrobe which may throw aerials. One plant that did survive was Ben Faux' *Oncidium flexusum* which gained a C.C./Q.O.S. photo in A.O.R., June, 1973. Due to being on slabs of brown tree fern, it floated on top of the flood. To see these collections reduced to a soddy mess after years of building up, was hard for our members to take. Some were all for throwing in the sponge. The committee of J.O.D.O.S. are starting a re-establishment fund to help get them going. Our friends in Papaua New Guinea Orchid Society are sending plants to help.

It was truly great to see members of Eastern District helping our members to clean up. It was not a pleasant job, as when the floods dropped, it left 14 in. to 16 in. of black smelling slimy mud. We could well have done without the sightseers who choked the roads, stopping the massive clean-up. Some members are now only just going back. Cyclone Zoe gave us another fright. Again, a couple of members had to shift.

At the Queensland Orchid Society Autumn Show, John Oxley, with the apt theme "Still Afloat" got 1st place for the third time. This was due to teamwork under the leadership of Gina McMonagle.

I end on this note. George Greer, an old grower who lost his collection, wants to be an old new grower in the Novice Section, truly a great spirit.

Yours faithfully,
Les Lobley, Immediate Past President.

THE LAZY GARDEN

Know your Rock Garden Plants and Dwarf Bulbs

— K. D. Gillanders, G. M. Patterson and E. R. Rotherham

As the preface to this book points out: "One of the great advantages of the well designed and wisely planted rock garden is the relatively small demand it makes for maintenance". Hence a rock garden can beautify an orchid grower's surroundings and leave him more time for growing orchids.

Mr. Gillanders is a specialist in alpine and rock flora, and Mrs. Paterson a grower, exhibitor and judge of bulb plants. Mr. Rotherham is well known to many orchid growers for his splendid orchid photographs in the book *Australian Native Orchids in Colour* (text by Leo Cady).

The combination of authors makes for a superb reference book. If you contemplate a rock feature around the glasshouse, or in any odd square metre, you'll find this book of immense value.

Nine photos on propagation, four drawings, eighty-one colour plates, 102 pages. Hard cover. Recommended price $5.95.

Society Show Dates and Meeting Nights

This year the Show dates are grouped entirely by States or geographical area. The State Society is shown first, with the remaining societies in alphabetical order. Where possible the usual meeting night and place is given for each Society. This makes it a valuable reference if you are passing through and would like to see how other orchid folk grow their orchids. It's a fine way to make new friends.

NEW SOUTH WALES — METROPOLITAN AREA

Orchid Society of N.S.W. WINTER SHOW. Westfield Plaza, Hornsby. Mon., 24th June to Sat. 29th during shopping hours and Tuesday night, 25th June. Set up Sun. 23rd. Theme "Free Expression". SPRING SHOW. Ryde Civic Centre, Top Ryde. Mon., 9th Sept., 2 to 9.30 p.m., Tues., 9.30 a.m. to 10 p.m., Wed. 11th, 9.30 a.m. to 9 p.m. Set up Sun. 8th, Noon to 8 p.m. Theme "Free Expression". Hon. Sec.: Mr. S. Condon, 31 Bambara Cres., Beecroft 2119. Phone 960-1809. Meets 4th Monday, St. James Parish Hall, cnr. Liverpool Rd. and Highbury St., Ashfield.

Berowra and District Orchid Society. SPRING SHOW. Berowra Community Hall, Berowra. Fri., 20th Sept., 10 a.m. to 8 p.m., Sat. 21st, 9 a.m. to 9 p.m. Strong in native orchids and floral art. Afternoon teas. Hon. Sec.: Mr. J. Armes, 2 Bayview St., Mt. Kuring-gai 2080. Phone 47-9392. Meets 3rd Thursday, Berowra Community Hall.

Cumberland Orchid Circle. WINTER SHOW. Presbyterian Church Hall, 7 Castle Hill Rd., West Pennant Hills. Wed., 3rd July, 8 to 10.30 p.m. SPRING SHOW. Dates and place not finalised. Apply to Hon. Sec.: Mrs. J. S. Jones, 121 Cardinal Ave., West Pennant Hills 2120. Phone 84-3061. Meets 1st Wednesday, Presbyterian Hall, 7 Castle Hill Rd., West Pennant Hills.

The Eastern Suburbs Orchid Society. MEMBERS' WINTER SHOW. St. Luke's Church Hall, Arden and Varna Sts., Waverley. Mon., 17th June, 8 to 10 p.m. MEMBERS' SPRING SHOW. St. Luke's Hall, Waverley, Mon., 16th Sept., 8 to 10 p.m. Normal meeting nights — lectures. Hon. Sec.: Mr. S. Condon, 31 Bambara Cres., Beecroft 2119. Phone 869-8967. Meets 3rd Monday, St. Luke's Church Hall, Arden and Varna Sts., Waverley.

Five Dock R.S.L. Orchid Society. ANNUAL ORCHID SHOW. Drummoyne Civic Centre, Marlborough St., Drummoyne. Thurs., 10th Oct., 2 to 10 p.m., Fri. 11th, 10 a.m. to 10 p.m., Sat. 12th, 10 a.m. to 7.30 p.m. Show takes place at peak flowering period for softcane Dendrobiums for which there are many special classes. Enquire. Hon. Sec.: Mrs. J. Duncan, 102 First Ave., Five Dock 2046. Meets 4th Wednesday, Five Dock R.S.L. Club, 66 Great North Rd., Five Dock.

Ku-ring-gai Orchid Society. SPRING SHOW. Pymble Community Centre, Pacific Highway, Pymble. Fri., 23rd Aug., 1 to 10 p.m., Sat. 24th, 10 a.m. to 9 p.m., Sun. 25th, 12.30 to 9 p.m. See the good early cymbidiums. Official opening by Mayor at 8 p.m. on 23rd Aug. Hon. Sec.: Mr. R. Hindwood, Gumnut Rd., West Pennant Hills 2120. Phone 84-6243. Meets 3rd Monday, Pymble Community Centre.

Lidcombe Hospital Orchid Society. ANNUAL ORCHID FESTIVAL. Main Recreation Hall, Lidcombe Hospital, Joseph St., Lidcombe. Fri., 6th Sept., Noon to 9 p.m., Sat. 7th, 9 a.m. to 9.30 p.m., Sun. 8th, 9.30 a.m. to 1.30 p.m. Hon. Sec.: Mrs. B. A. Bailey, 44 Bertram St., Mortlake 2137. Phone 73-5162. Meets 2nd Wednesday, Supper Room, Main Recreation Hall, Lidcombe Hospital.

Manly-Warringah Orchid Society. SPRING SHOW. Mona Vale Memorial Hall, Pittwater Rd., Mona Vale. Fri., 30th Aug., 1 to 8 p.m., Sat. 31st, 8 a.m. to 8 p.m., Sun., 1st Sept., 10.30 a.m. to 5 p.m. Admission 20c, children free. Lucky door prizes, orchid slide shows, potting demonstrations, stall and raffle. Hon. Sec.: Mr. R. Barrack, 31 Wilson St., Harbord 2096. Phone 93-2753. Meets 4th Thursday at Narraweena Community Centre, Oceana St., Narraweena.

North Shore Orchid Society. WINTER SHOW. Held in conjunction with regular meeting night, 3rd July. SPRING SHOW. Grace Bros. Chatswood Store. Tues., 10th Sept. to Sat. 14th, Tues. and Wed. finish 4.15 p.m. otherwise shopping hours. Hon. Sec.: Mr. R. Rockfort, 6 Dalrymple Ave., Lane Cove 2066. Phone 42-2575. Meets 1st Wednesday, Willoughby Town Hall, Victoria Ave., Chatswood.

Panania-East Hills (R.S.L.) Orchid Society. ORCHID EXHIBITION. Panania Senior Citizens' Club, Anderson Ave., Panania. Sat., 21st Sept., 9.30 a.m. to 8 p.m. Hon. Sec.: Mr. G. F. Costa, 24 Park Rd., East Hills 2213. Meets 1st Tuesday, Panania-East Hills R.S.L. Club Ltd.

Parramatta and District Orchid Society. WINTER SHOW. Todd Hall, Jubilee Park, Marion St., Parramatta, Tues., 23rd July, 7.30 to 10 p.m. SPRING SHOW. Parramatta Town Hall, Church St. Thurs., 12th Sept., Noon to 10 p.m., Fri. 13th and Sat. 14th, 9 a.m. to 10 p.m., Sun. 15th, 10 a.m. to 5 p.m. Featuring N.S.W. Champion Miniature Cymbidium. Hon. Sec.: Mrs. P. J. Phillips, 29 The Trongate, Granville 2142. Phone 637-6797. Meets 4th Tuesday, Tood Park, Jubilee Hall, Parramatta.

Sutherland Shire Orchid Society. WINTER SHOW will be held at the Gymea Community Hall in the Gymea Shopping Centre on Monday, 8th July, 1974, commencing at 8 p.m.

Western Suburbs Orchid Society. WINTER SHOW. Presbyterian Church Hall, Correy's Ave., North Strathfield. Tues., 9 July. Evening Show commencing 8 p.m. Trophy for best visitor's plant. SPRING SHOW. Tues., 10th Sept. Other details as for Winter Show. Hon. Sec.: Mr. E. J. Lillis, 12 Knocklayde St., Ashfield 2131. Phone 797-9995. Meets 2nd Tuesday at Presbyterian Church Hall, Correy's Ave., North Strathfield.

HUGE COMBINED SPRING SHOW ST. GEORGE AREA

The Sutherland Shire Orchid Society, Sydney Orchid Society and the St. George Orchid Society will combine to hold a Spring Show at the Hurstville Civic Centre on Friday, 30th August, Saturday, 31st August and Sunday, 1st September.

The Show is to be called the Southern Districts Orchid Show.

A Committee is under the Chairmanship of Mr. Ron Chalmers, President of the Sutherland Shire Orchid Society, and the Show Secretary is Mr. Greg Campbell.

This will be a spectacular Show. An attractive Schedule with numerous Classes covers Classes for Open, Novice and Floral Art Exhibitors.

Set up of the Show is on Thursday night, 29th August and entries will be accepted till 11 p.m. Late entries will also be received until 8.00 a.m. Friday, 30th August, 1974.

Marshal is Mr. Kevin Wilson, assisted by Mr. R. Rothwell and Mr. D. Davies. All men are of great experience, and exhibitors can be assured of every consideration.

Venue of the Show:

The modern and attractive Hurstville Civic Centre, McMahon Street, Hurstville. Ample parking areas available, and handy to Hurstville station.

Time for Viewing the Show:

Friday,	30th August	11.00 a.m. to 9.00 p.m.
Saturday,	31st August	9.00 a.m. to 9.00 p.m.
Sunday,	1st September	10.00 a.m. to 4.00 p.m.

For your schedule contact

Mr. R. Chalmers, Phone 525-7215, or

Mr. G. Campbell, Phone 546-7531.

NEW SOUTH WALES — NEWCASTLE AREA

Newcastle Orchid Society. 26th ANNUAL ORCHID EXHIBITION. City Hall (Supper Room). Thurs., 12th Sept., 1 to 10 p.m., Fri. 13th and Sat. 14th, 10 a.m. to 10 p.m. This Show will be worth seeing. Hon. Sec.: Mr. N. L. Hellier, 17 Stanley St., Merewether 2291. Phone 61-2989. Meets 4th Tuesday at Masonic Hall, Beaumont St., Hamilton.

Belmont-Swansea District Orchid Society. SPRING SHOW. R.S.L. Hall, Swansea. Fri., 6th Sept., 1 to 9.30 p.m., Sat. 7th, 9.30 a.m. to 10 p.m., Sun. 8th, Noon to 5.30 p.m. Hon. Sec.: Mr. T. G. Price, 247 Pacific Highway, Swansea. Phone 71-1321. Meets 4th Friday at Masonic Hall, Gen St., Belmont.

Cooranbong Orchid Society. COORANBONG ORCHID SHOW. Avondale Church Hall. Wed., 25th Sept., Noon to 9 p.m., Thurs., 26th, 10 a.m. to 9 p.m. Hon. Sec.: Mrs. R. Duffy, 34a Avondale Rd., Cooranbong 2265. Phone 77-1111. Meets 2nd Thursday at Avondale Church Hall.

Gosford and District Orchid Society. WINTER SHOW. Imperial Centre, Mann St., Gosford, 15th July to 20th, open all shopping hours, including late Friday. SPRING SHOW. Mon., 9th Sept. to Sat. 14th, also in Imperial Centre, during shopping hours. Meets 4th Thursday of each month at C.W.A. Rooms, Donnison St., Gosford. Hon. Sec.: Mrs. E. McKeon, P.O. Box 541, Gosford 2250. Phone 41-4753.

Maitland and Coalfields Orchid Society. SPRING SHOW. Green Hills, East Maitland. Thurs., 26th Sept., Noon to 5 p.m., Sat. 27th, 9 a.m. to 9 p.m., Sun., 28th, 9 a.m. to Noon. Hon. Sec.: Mr. B. Mears, 39 Main Rd., Gillieston Heights. Phone 32-8100.

Morisset and District Orchid Society. SPRING SHOW. Bonnell's Bay Community Hall. Fri., 13th Sept., Noon to 8 p.m., Sat. 14th, 9 a.m. to 8 p.m., Sun., 9 a.m. to 3 p.m. Hon. Sec.: Mrs. M. Farleigh, 25 Amos St., Bonnell's Bay 2264. Phone 73-1484. Meets 3rd Monday each month, C. of E. Hall, Bridge St., Morisset.

Tuggerah Lakes Orchid Society. WINTER SHOW. R.S.L. Hall, Wyong. Fri., 19th July, 8 p.m. to 11 p.m. SPRING SHOW. R.S.L. Hall, Wyong. Fri., 27th Sept., 9 a.m. to 8.30 p.m., Sat. 28th, 9 a.m. to 8.30 p.m., Sun. 28th, 9 a.m. to 5 p.m. Devonshire teas served. Just over one hour from Sydney. Hon. Sec.: Mr. Douglas Goode, 44 Ocean Pde., The Entrance 2261. Phone Gosford 32-2695. Meets 3rd Friday at R.S.L. Hall, Wyong.

NEW SOUTH WALES — RURAL

Blue Mountains and District Orchid Club. SPRING SHOW. For venue contact Secretary. Sat., 9 a.m. to 8 p.m. Worth a trip to the mountains. Hon. Sec.: Mr. T. Houterman, 54 Great Western Highway, Valley Heights 2777. Meets 4th Friday, Red Cross Hall, Springwood.

Byron District Orchid Society. SPRING EXHIBITION. Bangalow R.S.L. Hall, Bangalow. Fri., 6th Sept., 10 a.m. to 10 p.m., Sat. 7th, 9 a.m. to 8 p.m. Hon. Sec.: Mrs. H. I. Hobbs, Bruxner Highway, Wollongbar via Lismore, N.S.W. 2480. Phone 29-7315. Meets 2nd Monday in month, alternating Bangalow, Mullumbimby and Byron Bay.

Campbelltown and District Orchid Society. CAMPBELLTOWN ORCHID SHOW. Sat., 28th Sept., 11 a.m. to 7 p.m. Ingleburn Community Centre, Oxford Rd., Ingleburn. Hon. Sec.: Mr. K. Bursill, 11 Condamine St., Campbelltown. Phone 2-2534. Meets 2nd Tuesday, C.W.A. Hall, Campbelltown Showground. Show is high standard with natives a feature.

Casino and District Orchid Society. SPRING SHOW. R.S.L. Hall, Canterbury St., Casino on 27th and 28th Sept. This Show is a main feature of Casino's Cavalcade of Sport and highlights "The Champion Orchid of Summerland". Hon. Sec.: Mrs. Norma Anderson, South Pharmacy, South Casino, N.S.W. 2470.

Gloucester and District Orchid Society. SPRING SHOW. R.S.L. Hall, Dennison St., Gloucester. Thurs., 19th Sept., Noon to 9 p.m., Fri. 20th, 10 a.m. to 9 p.m. Hon. Sec.: Mrs. M. J. Thompson, 42 Queen St., Gloucester, N.S.W. 2422. Phone 330. Meets 2nd Thursday at 15 Queen St., Gloucester.

Hastings River Orchid Society. SPRING SHOW. C.W.A. Hall, Wauchope. Fri., 13th and Sat., 14th Sept. Hon. Sec.: Mr. H. Klose, 8 Campbell St., Wauchope 2446. Phone Wauchope 134.

Illawarra District Orchid Society. WINTER SHOW. Warrawong Regional Centre, Warrawong. Thurs., 27th July, 9.30 a.m. to 9.30 p.m., Fri 28th, 8.30 a.m. to 5.30 p.m., Sat., 8.30 a.m. to 12.30 p.m. 23rd SPRING FESTIVAL OF ORCHIDS. Wollongong Town Hall. Fri., 6th Sept. and Sat. 7th, both days 9 a.m. to 9 p.m. Hon. Sec.: Mr. J. Woods, 6 George St., Wollongong.

Manning River Orchid Society. ANNUAL SHOW. R.S.L. Rooms, Pulteney St., Taree. Thurs., 12th Sept., Noon to 9 p.m., Fri. 13th, 9 a.m. to 9 p.m. Hon. Sec.: Mr. R. M. Richardson, Hillville Rd., Tinonee 2430. Phone 50-6228. Meets 1st Friday, C.W.A. Rooms, Victoria St., Taree.

City of Lismore Orchid Society. SPRING ORCHID EXHIBITION. Cedar Room, Lismore City Hall. Mon. 9th, 1 p.m. to 10 p.m., Tues. and Wed., 10 a.m. to 10 p.m., Thurs. 12th, 10 a.m. to 6 p.m. Setting up 4 p.m. Sun. 8th. Judging 10 a.m., Mon. Hon. Sec.: Mrs. H. I. Hobbs, Bruxner Highway, Wollongbar via Lismore 2480. Phone 29-7315. Meets 3rd Tuesday, Red Cross Rooms, Keen St., Lismore.

South Coast Orchid Society. WINTER SHOW. Corrimal Methodist Centre. Sat., 20th July, 10 a.m. to 9 p.m. For all comers — send for schedule. SPRING FESTIVAL. Corrimal Methodist Centre. Thurs., 19th Sept., 2.30 to 9 p.m., Fri. 20th, 10 a.m. to 9.30 p.m., Sat. 21st 10 a.m. to 8.30 p.m. Special open and Floral Art sections. Send for schedule. Hon. Sec.: Mrs. C. Wilson, 57 Robertson Rd., Coniston 2500. Phone 29-7128. Meets 1st Monday at Corrimal Methodist Centre. Only one hour's drive from Sydney.

Tweed District Orchid Society. SPRING SHOW. Autumn Club, Murwillumbah. Thurs., 29th Aug. and Fri. 30th, 9 a.m. to 9.30 p.m., Sat. 31st, 9 a.m. to Noon. Hon. Sec.: Mr. B. Chick, 16 Wade St., Murwillumbah 2484.

QUEENSLAND

Queensland Orchid Society. SPRING SHOW. Neptune Kingdom, Brisbane Home and Building Centre, Wickham and Constance Sts., Valley. Fri. 27th, Sat. 28th, and Sun. 29th. Setting up and judging 26th. Show Chairman: Mr. R. Williamson, phone 95-3353. Hon. Sec.: Mr. B. C. Brohan, Box 2002, G.P.O., Brisbane 4001. Meets at Senior Citizens' Centre, McLaughlan St., Fortitude Valley, Brisbane.

Eastern District Orchid Society. SPRING SHOW. Guardian Angel's Hall, Wynnum Central. Sat., 7th Sept., 9 a.m. to 10 p.m., Sun. 8th, 8 a.m. to 10 p.m. Hon. Sec.: Mr. R. Devey, P.O. Box 60, Wynnum Central 4178. Phone 96-2405. Meets 4th Thursday at Guardian Angel's Hall, Wynnum Central.

John Oxley Orchid Society. WINTER SHOW. Presbyterian Church Hall, Oxley Rd., Sherwood. Fri., 26th July, 10 a.m. to 9 p.m., Sat. 27th, 9 a.m. to 8 p.m. Only Winter Show in Queensland. Hon. Sec.: Mrs. Joan Imray, 26 Lance St., Corinda. Phone 79-6733. Meets 2nd Wednesday, Presbyterian Hall, Oxley Rd., Sherwood.

Mackay and District Orchid Society. Only one Show is held each year. This is an Autumn Show held in conjunction with the Mackay Tourist Festival, invariably on the second Friday and Saturday of April. The Show is non-competitive but features fine hardcanes and other warm growing orchids. The Society meets in the Town Hall, Main St., Mackay, on the third Thursday in each month. Hon. Sec.: Mr. Lewis Dovey of 18 Mogford St., West Mackay, Queensland 4740.

North Coast Orchid Society. SPRING SHOW. Civic Hall, Nambour. Fri. 6th and Sat., 7th Sept., 8.30 a.m. to 9 p.m. Admission 40c, Pensioners 30c, Children 10c. Plants for sale. Hon. Sec.: Mrs. V. Usher, Hobson St., Palmwoods 4555. Meets 3rd Tuesday at Band Hall, Daniel St., Nambour.

The Toowoomba Orchid Society. SPRING SHOW. Myer Roof-Top Car Park. Sat., 21st Sept., Mon. 23rd to Fri. 26th, each day 10 a.m. to 10 p.m. Held during "Carnival of Flowers" Week. Hon. Sec.: Miss E. H. Miles, 6 Somme St., Toowoomba 4350. Meets 4th Friday, St. James Parish Hall, Russel St.

Townsville Orchid Society. SPRING SHOW. Tentative dates: Wed., 18th Sept., Thurs. 19th and Fri. 20th, 9 a.m. to 9 p.m. Location not yet arranged. Hon. Sec.: Mrs. M. E. King, P.O. Box 83, Townsville, Queensland 4810.

SOUTH AUSTRALIA

Orchid Club of South Australia Inc. WINTER SHOW. Australian Mineral Foundation Building, Conyingham St., Frewville. Thurs., 11th July, 9 p.m. to 10.30 p.m. Normal meeting night. SPRING ORCHID FESTIVAL. Auditorium of John Martin & Co. Ltd., Adelaide. Mon., 23rd Sept. to Sat., 28th Sept. Last day 8.35 a.m. to 11.30 a.m., weekdays 9.09 a.m. to 9 p.m. Hon. Sec.: Mr. D. J. Harris, 38 Princes Rd., Torrens Park 5062. Phone 71-9511. Meets at Australian Mineral Foundation, Conyngham St., Frewville, 1st Thursday.

The S.A. Orchidaceous Society. SPRING ORCHID SHOW. Myer Store (8th floor Display Centre), Mon., 16th Sept. to Fri. 20th, each day 9.05 a.m. to 5 p.m. Held in conjunction with Adelaide Children's Hospital "Good Friday" Appeal. Hon. Sec.: Mrs. K. G. Shawyer, 60 Balfour St., Nailsworth 5083. Meets 3rd Wednesday at Thebarton Assembly Hall, South Rd., Torrensville.

Whyalla Orchid Club. SPRING SHOW. Westland Shopping Mall. Thurs., 3rd Oct., 8 a.m. to 5.30 p.m., Fri. 4th, 8 a.m. to 9 p.m., Sat. 5th, 8 a.m. to Noon. This is the tenth Annual Show. Hon. Sec.: Mr. M. E. Dennis, 265 Jenkins Ave., Whyalla Stuart 5608. Meets 3rd Wed. at Whyalla Left Hand Club, 12 Dick St., Whyalla.

VICTORIA

Melbourne Eastern Orchid Society. WINTER SHOW. St. John's Hall, Camberwell Junction. Mon., 24th June, 8 p.m. WORLD OF ORCHIDS. Myer Auditorium, Chadstone Shopping Centre. Fri., 20th Sept. and Sat. 21st, both days 10 a.m. to 10 p.m., Sun. 22nd, 10 a.m. to 4 p.m. Hon. Sec.: Mr. K. H. Bruce, 31 Glen Ebor Ave., Blackburn 3130. Phone 878-0247. Meets last Monday of month at St. John's Hall, Camberwell Junction.

Victorian Orchid Club. WINTER SHOW. Doncaster Shopping Town. Mon., 17th July to Fri., 21st July in shopping hours. Set up on Sun. 16th. Theme is "Colonial Australia". SPRING SHOW. Camberwell Civic Centre. Sun., 29th Sept. through to Thurs., 3rd Oct. Set up Sat., 28th Sept. from 9 a.m. Hours 10 a.m. to 10 p.m. each day. Hon. Sec.: Mr. T. Woodford, 9 Curlew St., Doncaster 3108. Phone 848-3698. Meets 3rd Monday at Main Auditorium, National Science Centre, 191 Royal Pde., Parkville.

TASMANIA

Tasmanian Orchid Society. SPRING SHOW. Venue to be confirmed, possibly in Macquarie St., Hobart. See Sept. "A.O.R.". Fri., 4th Oct., 1 to 10 p.m., Sat 5th, 10 a.m. to 10 p.m., Sun. 6th, 10 a.m. to 6 p.m. Hon. Sec.: Mr. J. Longden, 54 Kellatie Rd., Rosny. Phone 44-2546. Meets 4th Monday, R.S.L. Club, Victoria St., Hobart.

The Devonport Orchid Society. SPRING SHOW. Held in conjunction with the Fourth Tasmanian Orchid Conference, 11th, 12th and 13th Oct. Details elsewhere in this issue. Hon. Sec.: Mrs. R. Bartlett, 16 Ronald St., Devonport. Phone 24-3028. Meets 3rd Wed., C. of E. Hall, Fenton St., Devonport.

The Orchid Society of North Western Tasmania. Burnie Town Hall. Thurs. 17th through to Sun., 20th Oct. Mainland visitors welcome. Hon. Sec.: Mr. P. L. Jackson, 58 Jorgenson St., Mortello, Burnie. Phone 31-4915. Meets 1st Wed., Methodist Hall, Ladbrooke St., Burnie.

Launceston Orchid Society. SPRING SHOW. Will be held end of Sept. Details from Mr. L. H. Westerway, 72 Forest Way, Trevallyn, phone 27-3159. Hon. Sec.: Mrs. Ferrall, 4 Luxmore Place, Launceston. Phone 44-1860. Meets 2nd Tuesday in members' homes.

WEST AUSTRALIA

The Orchid Society of Western Australia (Inc.). WINTER ORCHID SHOW. Carousel Shopping Centre, Cannington. Thurs., 4th July and Fri. 5th, 9 a.m. to 9 p.m., Sat. 6th, 9 a.m. to Noon. SPRING ORCHID FESTIVAL. Garden City Shopping Centre, Booroogoon. Thurs., 19th Sept., Fri. 20th and Sat. 21st, each day 9 a.m. to 9 p.m. Hon. Sec.: Mr. J. M. Foley, 39 Stirk Rd., Alfred Cove 6154. Phone 30-2132. Meets 4th Friday at Science House, 10 Hooper St., West Perth.

DEVONPORT ORCHID SOCIETY TO STAGE TASMANIAN CONFERENCE

RUTH BARTLETT

The Devonport Orchid Society was formed almost four years ago and at the moment we have approximately 80 members. What we lack in experience and knowledge I think we make up in enthusiasm. We have held two successful shows and this year we are holding our Annual Show in conjunction with the Tasmanian Orchid Conference for which we are Host Society.

The Show opens on Friday, 11th October and continues to Saturday and Sunday. It is being held in the Devonport Town Hall.

The Fourth Tasmanian Orchid Conference opens on the Saturday. We are hoping to have the pleasure of any mainlander's company who can manage to come. Make yourself known because we would like to look after you.

We are very ambitious for a comparatively new Society and three mainland speakers have accepted invitations to come. They are Messrs. Russell Martin (who has been a great help to us), Syd Monkhouse and Tom Henry. Mr. Chas. Taylor of Sydney, who will be holidaying in Tasmania, will be one of the judges.

The above speakers will be joined by several of Tasmania's best known growers in Messrs. Phil Byers (Burnie), Chris Nicholas (Hobart), Len Clark (Launceston) and Peter and Peter Donnelly (Devonport).

Tasmania is a good place for a holiday anytime, but try and make it in October for a Conference you'll enjoy.

16 Ronald St., Devonport, Tas. 7310

A PEEP AT WIDER WORLDS

A NEW ORCHID EQUATION

Softcane dendrobiums-Yamamoto. That's where the action is! The major advances in breeding nobile type dendrobes have taken place at the Yamamoto Nursery. Convince yourself: read the article, see the colour illustrations, in *Orchid Digest*, March-April, pp. 40-45, 1972 Written by Mr. Jiro Yamomoto himself. Note the illustrations on the back cover too. There's another lovely page of them on page 80 of the May-June, 1973 issue.

HOW'S YOUR AGGREGATUM?

Should you never have a great aggregate of flowers on your *Dendrobium aggregatum* then you will probably find clues to greater productivity in Mr. Alan Greatwood's article on the species in "The Orchid Review" for January, 1974, page 18. The clues are heat and moisture when growing, with plenty of air and light, then a cooler and decidedly drier period during the winter months. But read all about it. Your Society Library should have it if you don't subscribe.

MAGIC OF FAR AWAY PLACES

Orchid country where no one has trod before! Like to go along? Throw up your job? Leave the family (and your orchids) to fend for themselves? On second thoughts — no. But you can read a wonderful account of such a trip. Turn to page 100 of the February issue of "American Orchid Society Bulletin for the exciting story of Dr. Milan D. Fiske's *Expedition to the Condor.*

TWO LEAVED CATS FOR COLOUR

Do you know your bifoliate cattleyas? If so, you'll be surprised how much more you can learn by reading an article in January-February, 1974 "Orchid Digest", page 5. It's by Ernest Hetherington and titled *The Influence of the Bifoliate Cattleyas in Producing Yellow, Orange, Red and Green Hybrids in Breeding.* Sixteen glorious colour illustrations show the species and some hybrids. You'll find it a great help in buying seedlings, including many cool growing ones.

MILTONIAS ON THE ROCKS

Not the kind of cocktail you can drink but one you can enjoy. Mr. W. W. G. Moir's article *Brazilian Miltonia and Miltonia warscewiczii* is an intriguing cocktail of orchid lore and geology. As usual in the "Orchid Digest" the illustrations give you more conceptions of species and hybrids from them than you'd get from a year spent visiting collections, November-December issue, page 200.

BRUSH UP YOUR GERMAN

Then find a copy of the October, 1973, "Die Orchidee" journal of the German Orchid Society. Pages 195 to 200 contain an article and illustrations (six in colour) titled *Erdorchideen in Australien* by Dr. Reinhart of Germany and Dr. Peter of 8 Baringa Street, Mt. Waverley, Australia. Shows our orchids as others see them.

TASMANIAN SOCIETY NOW 27 YEARS OLD

JOHN LONGDEN

The Hobart Orchid Club was formed on 11th February, 1947, by a group of 10 orchid enthusiasts. Its main object, according to the Minute Book, was "to foster the cult of orchid growing".

Progress was such that by 1951 membership had grown to 40 and Tasmania's first orchid show was held in the Hobart Town Hall on 6th September, 1951. This was an outstanding success with over 500 visitors. Grand Champion was *Cymbidium* Alexanderi 'Westonbirt', exhibited by foundation secretary Alan Cruickshank. He also gained a cultural award for *Cymbidium* Doris Sander.

Three active members who participated in the 1951 show and are still with us are Mrs. H. F. Boyes, Mr. Len Clark of Launceston and Honorary Life Member, Mrs. Jean Nanscawen.

Regular monthly meetings were held and a feature of these was a non-competitive display of plants in bloom. In April, 1952, it was agreed that plants exhibited be judged by popular vote for points toward an annual competition.

This practice is still carried out but on a much more elaborate scale incorporating judged sections as well as popular votes for open and novice growers. Indoor plants are included as a separate feature.

On 26th February, 1953, due to greater geographical distribution of members, the name was changed from Hobart Orchid Club to Tasmanian Orchid Society.

Activities over the years were many and varied but all centred around a togetherness in orchids. Regular visits were made to our northern members, compost picnics were arranged and a Christmas party, complete with Christmas tree was developed.

A very stalwart committee had set itself the task of visiting all members' collections and advising and reporting thereon. Records show that despite efforts by some committees to "give it away" the visits proceeded for some years and many a novice grower must have benefited from the advice given.

Annual spring shows had traditionally been two day events and the major breakthrough came in 1964 when this was increased to three days. The move to weekend shows (Friday to Sunday) followed in 1971. Public response had been excellent and for the present these are here to stay.

Prior to the formation of the Australian Orchid Council, Tasmania had little opportunity to actively engage in the judging of orchids, particularly in view of the many methods and standards in vogue at that time.

However, in July, 1963, a most comprehensive judging training programme was commenced, ably backed by various officers of the A.O.C. The aim was to provide a nucleus of highly trained judges and the course extended over some 18 months. Training of new judges still continues.

To obtain first-hand knowledge of current trends a mainland judge is usually flown in to officiate at spring shows but A.O.C. award judging is carried out by the T.O.S. panel.

1968 heralded the first autumn show. Laelias and oncidiums are faily extensively grown in the Hobart area and formed the backbone of this enterprise. Interest has grown considerably and this annual event is now staged in the display foyer of the new A.M.P. building in the city centre.

Likewise, in October, 1969, agreement was reached with the Royal Agricultural Society to stage a display at the Royal Hobart Show. Public interest was such that this exhibition, occupying the whole of one end of the Homecrafts Pavilion, and has become an annual feature.

Early in 1968, a chance remark by a Launceston member that there should be more get-togethers, sowed the seeds for Tasmania's first orchid conference. Purpose was threefold:

1) A concentrated drive for new members.
2) To create interest for a Tasmanian contingent to attend the 6th World Orchid Conference in 1969.
3) Formation of an orchid society in Launceston.

The 1968 conference was a great success and laid the pattern for subsequent bi-annual conferences.

Between 60-70 registrants spent a most enjoyable weekend and following on from

this the Launceston Orchid Society was formed in November, 1968.

Foundation president was Mr. Len Clark, one of our pioneer growers and long time members of the Tasmanian Orchid Society.

Latter years have shown a swing toward younger members which augers well for the future. Activities have been adjusted accordingly with a particular emphasis on family barbecues, etc.

The membership of the Society has increased considerably over recent years and now exceeds 100.

50 Kellatie Road, Rosny, Tasmania 7018

THE ORCHID SOCIETY OF NORTH WESTERN TASMANIA

(The second Society formed in Tasmania)

The inaugural meeting of the Orchid Society of North Western Tasmania was held in the Adult Education Board Rooms on 16th May, 1962. There were eleven persons present and the meeting was chaired by Mr. J. McQueen.

Those present included Mr. and Mrs. J. McQueen, Mr. and Mrs. H. Miller, Mrs. J. Johnson, Mr. B. Dudman, Mrs. Stokes, Mr. A. Atkinson, Mr. and Mrs. M. Anderson and Mr. Kuys.

At that first meeting membership fees were set at fifteen shillings (15/-) for single persons and £1/-/- for husband and wife, the fees today are $1.50 and $2.00.

It was decided at that first meeting to hold a monthly plant competition and that a price of sixpence be placed on each plant tabled, members also paid a price of one shilling for supper each night.

The first two cymbidiums tabled in the competition were *Cymbidium* Brownie and *Cymbidium* Doris.

The first year of the society saw the introduction of an annual spring show, a monthly newsletter and the annual compost picnic.

In conjunction with the 1964 spring show a photographic competition was held, and during 1965, the first seedling competition was held.

The first Tasmanian Orchid Conference was held at Hobart in 1968 where Mr. Frank Slattery was the guest speaker, and an extremely interesting programme was provided by the Tasmanian Orchid Society.

This conference proved so successful that it was decided to hold a second conference at Burnie in 1970.

1970 saw two great things happen in the world of orchids in Tasmania, firstly, the Devonport Orchid Society was formed and secondly, the Second Tasmanian Orchid Conference was held at Burnie.

This second conference was a great success and there were forty delegates present representing the four Tasmanian Orchid Societies. Guest speaker was Mr. Bob Evans, who spoke at night on cattleyas and kept everyone up to date on the latest cultural methods on the mainland. It was then decided to hold a third conference at Launceston in 1972.

As the Orchid Society of North Western Tasmania grew with the years so too did new ideas for get-togethers and fun evenings, 1971 saw the first auction and 1972 the first annual barbecue and 1973 saw the introduction of the first annual dinner.

It was in 1972 that the Launceston Orchid Society was host for the Third Tasmanian Orchid Conference, it was at this conference that sixty delegates were present, which is only showing us that conferences were here to stay.

There are three foundation members that are still financial members of this society and these are — Mr. B. Dudman, and Mr. and Mrs. H. Miller.

The present membership is 60 and the average meeting attendance is 25.

THE LAUNCESTON ORCHID SOCIETY

(The third Orchid Society formed in Tasmania)

As a result of the First Tasmanian Orchid Conference a new Orchid Society in Tasmania was born, this was the Launceston Orchid Society.

Their first meeting was held in the home of Mr. and Mrs. Len Clark and this meeting was chaired by Mr. Chris Nicholas who was accompanied by his wife Phyl and Mr. Jerry Reid, another Tasmanian Orchid Society member.

Mr. L. Clark was elected president, Mr. Ern Peck, Vice-president and Mr. L. Rae, Secretary. It was resolved that the meetings be held in the members' homes until the society membership became too large.

Mr. Ern Peck who instigated and worked extremely hard so that this new society could be formed, should be congratulated for his efforts and keenness.

In November, 1969, a display was arranged in conjunction with the Rose Show and in 1970, a display of orchids was arranged at the Launceston Agricultural Show. Both these displays proved to be very successful.

September, 1972 saw the Launceston Orchid Society host to the third Tasmanian Orchid Conference. Mr. C. M. Taylor from Sydney was the guest speaker and together with seven other speakers made this conference session very enjoyable to the sixty delegates who attended.

It was decided that The Devonport Orchid Society should host the Fourth Tasmanian Orchid Conference in 1974.

1972 also saw the introduction of the first Orchid Show of the Launceston Orchid Society and this also being so successful that 1973 was the second annual show. The Launceston Orchid Society has a membership of 35, this may seem very small to some people but it should be pointed out that owing to its location, Launceston is not an ideal place to grow orchids in, especially in the winter as heavy frosts prevail.

THE DEVONPORT ORCHID SOCIETY

(The youngest Orchid Society in Tasmania)

In January, 1970, a small group of seven people, at the invitation of Mr. and Mrs. E. Wilkins, assembled at their home in 29 Macfie Street, Devonport to form the Devonport Orchid Society.

From this humble beginning this society has grown so that it now has a membership of almost 100 members. In just four years this society can be proud of many things, one of these is the amicable way in which every function is held.

The foundation members were Mr. Buchanan, President, Mrs. R. Bartlett, Secretary-Treasurer, Mr. and Mrs. E. Wilkins, Mr. and Mrs. L. Maxfield and Mrs. Geard.

February, 1970 saw yet another visit to a newly formed society by Mr. and Mrs. Chris Nicholas who kindly showed slides of orchids and past shows.

1970 also saw the introduction of a monthly newsletter and during this year the Devonport people were introduced to orchids by way of a display housed in the Hobart Savings Bank branch.

Each year there is a display in the main street of Devonport which serves as an excellent advertisement for the annual spring show which was introduced in October, 1971.

June, 1971 saw an acceptance to an invitation, to speak at one of the meetings, by Mr. Russell Martin of Melbourne. Mr. Martin seemed to instill a great deal of enthusiasm to the members and since this time this society has never looked back.

The times between June, 1971 and June, 1974 have been great ones and the three Northern Societies have been together on many occasions.

Mr. Buchanan, who was the president for the first three years has been made a life member.

This year in Tasmania will be Devonport's year as it is their job to host the Fourth Tasmanian Orchid Conference in October. Devonport have provided something else this year for the conference, and this is the introduction of a Conference Show which will be open to mainland exhibitors and nurserymen. It is interesting to note that cut flowers will be eligible for prizes.

There will be three Mainland speakers at the conference as well as selected Tasmanian speakers.

Conference Day, 12th October, 1974
Proposed Programme

12 Midday — Luncheon
1.15 p.m. to 3 p.m. — Lectures
3 p.m. to 3.15 p.m. — Afternoon Tea
3.15 p.m. to 5 p.m. — Lectures
6.15 p.m. to 8 p.m. — Dinner
8.15 p.m. to 9.15 p.m. — Lectures

A special programme will be arranged from 9.15 p.m. till the close which will be of interest to all those attending.

Sunday 13th will see the advent of personal tours to the country areas to the South of Devonport and also if the need arises other tours will be provided if the demand is needed.

The registration cost of $7.00 will include all of the above as well as conference papers. At this stage it is not envisaged that a registrant will have to pay for the Sunday outing.

REGISTRAR:

Mrs. Aitchison, 11 Boronia Avenue, Devonport, Tasmania 7310

LOST ORCHID STORY

If you have read the article on *Maxillaria witsenioides* by Rebecca T. Northen, as published in the "Orchid Digest", September-October, 1973, in which she describes her re-discovery of this plant during one of the Seventh W.O.C. Ecological Tours, you'll be interested to know that well known Australian orchid identity Mr. A. B. Porter was a member of the party. Mr. Porter was the only one to think to take a photograph of the habitat, and Mrs. Northen was most grateful to receive a print.

SUB-TROPICAL ORCHID COUNCIL
Active Day at Maryborough

Maryborough Orchid Society welcomed orchid growers from Gympie, Maryborough, Nambour, Maroochydore, Bundaberg and Caloundra on Saturday, 23rd February for the second annual meeting of the Sub-Tropical Orchid Council.

The feature for the day took the form of a "mini orchid show" with 93 flowering plants giving a wonderful display. These were judged by members of the newly formed judging panel. A demonstration of potting on from flasks was given by Mr. Alan Walker of Maryborough, followed by a lecture on the effect of genes and chromosomes in breeding orchid hybrids by Mr. B. Matthews.

After a delicious smorgasbord lunch served by Maryborough Society the annual meeting of the Council was held. This Council was formed to co-ordinate orchid activities in the area from Bundaberg to Caloundra, and Mr. Bill Patterson retiring president, in presenting his annual report revealed a very active year, culminating in the judging examinations and the formation of a judging panel. The following office bearers were then elected:—

President: Mr. Reg Baker
Secretary: Mrs. Doris Mitchell
Treasurer: Mr. R. Moller
Registrar: Mr. D. English

A sub-committee of three members was formed to investigate the possibility of a suitable location in the Nambour District for the establishment of a National Orchid Collection under the auspices of the Australian Orchid Council.

The meeting closed with a vote of thanks to Maryborough for hosting a most successful and entertaining day.

LIGHT ON SCHLECHTER'S NEW GUINEA SPECIMENS

The latest issue of "Contributions from the N.S.W. National Herbarium" will be of great value to students of New Guinea orchids. Mr. D. F. Blaxcell of the Herbarium publishes a paper in it on *The Status of Schlechter's Specimens of Orchidaceae held at the National Herbarium of N.S.W.* All Schlecter's types held at Leyden were destroyed by bombing in World War II and this makes the N.S.W. specimens particularly valuable. Of the 207 specimens many are designated as "Type". Mr. Blaxcell gives collection numbers and shows type status.

The fact that this paper is sub-titled *I. New Guinea* no doubt indicates that a similar paper on Schlechter's Australian collections is in preparation. It is pleasing to note the amount of valuable work on orchids emanating from the Herbarium since the appointment of Mr. Blaxell as specialist botanist in the *Orchidaceae*.

DISEASES AND PESTS OF ORCHIDS

Mr. J. Mackinney in a talk to the *Gold Coast O.S.*

Among the main enemies of orchid plants are the sucking and biting insects such as scales and spider mites, which kill the plant if left untreated.

White oil is often used, but it is not sufficient. The best control is a systemic spray, which penetrates into the plant tissue, and sucking pests are poisoned. Systemic sprays must be used with care and with common sense. They are most toxic when in concentrated form as bought (e.g. *Malathion, Rogor 40, Anthio,* etc.), and any spillage should be wiped off bottle *at once,* (otherwise it becomes crystallised and dangerous to touch).

Wash hands thoroughly and avoid any contact with the skin. It is advisable to wear gloves when mixing and to avoid inhaling.

Diazanon, which is used in Cattle Tick Control (cattle are immersed in it), is one of the safest to use, when diluted to the recommended strength. *Clensel* is safe, but has little residual effect. Other pests such as the mealy bug, woolly aphis and target scale can all be treated with the same sprays.

Red Spider Mite, its presence detected by a silvery effect of web on the underside of leaves is fairly common and is a killer. Mites are very small and red in colour. False Spider Mite, too small to be seen with the naked eye, often attacks Cymbidiums. Many good plants have been condemned as virus-infected but were actually attacked by False Spider Mite. Symptoms are very alike, but in the case of Mite infection, new growth will be clean and healthy after effective treatment of the pest.

Mites and Thrip lurk in the folded up new growths. As the leaf grows, the damaged area grows and it attacked by fungus, and the damaged tissue looks very like virus.

It costs the Department of Agriculture about $10 to test a plant for virus, so if a plant is in bad shape and not a particularly valuable one, it is best to try to clean the plant and watch for new growth.

For small-type insects, three treatments are needed, five to seven days apart, as few insecticides will kill all three stages of insect growth. Dusts are not nearly so valuable as wet sprays. Insects tend to breed more quickly in warm weather. Prevention is better than waiting till disease infestation is visible.

Diazanon is also useful for grasshopper control (and for all gall wasp on citrus fruit trees). Diazanon is used in strength of 1 part in 400 (i.e. 1 teaspoonful to 2½ gallons).

It is advisable to spray in the morning in winter and in summer the evening.

"The Shot Gun Treatment" is a great time-saver and very effective:—

Diazanon (insecticide).

Benlate (fungicide) effect lasts about a month, is worth the higher cost.

Fertilizer. Any liquid foliage fertilizer such as Aquasol, Zest or Garden Gold, in normal proportions.

Wetting Agent, such as R.D.O. Field Pack, Agral, etc. or Clensel.

These are all compatible and may be both combined and applied at the one spraying.

Thrive is the name of one fertilizer which has a high nitrogen content.

There are some "Controlled Release" fertilizers which are used on or in the compost, such as Magamp (in compost) and Osmacote, applied on the surface, giving three to four months' treatment. Be careful in dosage, use only half the amount recommended as some growers have had root loss. Water heavily to leach out salts.

Agraform Plant Tablets, one, two or three tablets under root when planting, useful with indoor potted plants.

FUNGUS. Avoid dusts or sprays with high copper content as it would cause defoliation. Captan is useful on small seedlings to prevent damping off.

A fungus-infected plant could be soaked in a Benlate emulsion at strength recommended on the container.

For Black Rot in Cymbidium bulbs, Natriphene (not on sale in Queensland) is recommended, but Benlate will generally do the job and lasts about a month, whereas old-time fungicides needed several treatments every six to 10 days.

SNAILS. For snail control, metaldehyde has been found most effective. To make an emulsion for spraying, take one tablespoonful metaldehyde, mix to a paste with wetting agent, then dilute to spray.

Metaldehyde will control the small Bush Snail, which keeps itself invisible under the bark compost while feeding on the root tips.

To dust lightly and evenly, it is a good idea to mix it witth another dust such as Tomato or Rose dust, equal parts of each, and applied with a Dust Gun.

NOTICE TO SUBSCRIBERS

SUBSCRIBERS are notified that the two year concession rate introduced last year, is being discontinued with this issue, as the second of the increased postal charges was implemented on 1st March, 1974, and the third increase is scheduled for 1st October, 1974. Those subscribers who took advantage of the offer have paid $5.00 for two years subscription and those subscribers who had paid the old $2.00 subscription rate to Shepherd and Newman and who will from now be renewing at the current $3.00 yearly rate, will in effect also be paying $5.00 for a two year period during which the higher postal charges have been or will be applicable.

Subscribers being members of the Orchid Society of N.S.W. Ltd. are also advised their subscriptions for the ensuing year will be renewed direct by the Publishers of this Journal, thereby eliminating duplication of records by both Organisations and it is hoped to provide a quicker, more efficient service to subscribers.

It has also been decided to discontinue the practice of issuing receipts, as has been done by most businesses these days. Needless to say, continuing receipt of the Journal is in itself evidence of subscription payments being received by the Publisher. Should an issue be missed then subscribers are asked to communicate directly with the Publisher.



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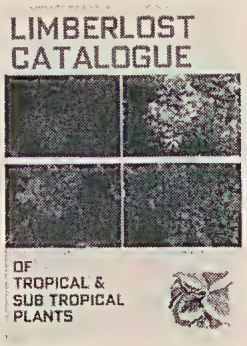
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There are still a couple of flowering size propagations of Tipperary 'Olivine May' available. This clone won the best for colour and form at last year's Manly/Warringah Show.

Propagations also available of Valya Craig 'Yellow Bird', a beautiful stainless concolour and a winner at N.S.W. Orchid Society Festival. We have also two small propagations of the beautiful Rosalba 'Olivine May', one in spike.

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TWO AWARDS FROM TASMANIA

Both from the same glasshouse but different owners. (Above) Hers: Mrs. C. (Phyllis) Nicholas' *Lycaste* Koolena 'Tracy Kim', HCC/TOS, with four flowers of remarkably even colour, each 4⅛ in. wide. His: This *Laelia anceps* earned a Cultural Certificate for Mr. Chris Nicholas. Mr. and Mrs. Nicholas have a third kind of orchid: "Ours". Photos: Chris Nicholas.





SIMPLICITY OF DESIGN WITH ORCHIDS

by Jean W. Slattery

The Orchid, despite its origin in antiquity, the size of its family and the magic that still clings to it, is most appropriate for present day design, for it has emerged from a cherished "once in a lifetime" flower into a happy, everyday sharing of life with thousands of today's people and, today, it is freely available.

Orchid Arrangement means value for money, by placing a few blooms in a simple design you display each one to its full advantage, you can display as little as one orchid and make a decoration of it. Orchids will enhance their surroundings and reward you with that wonderful sense of achievement.

If orchids are to keep their first fresh appeal they must not be allowed to wilt. All flowers and foliage should be hardened before being used in an arrangement by being given a long deep drink. One of the most important factors in helping orchid blooms to live longer, both the container and water should be clean. A few small nuggets of charcoal help to keep water sweet. Orchids may last longer if they are given certain easily assimilated foods. Sugar, glucose and proprietary nutrients can be added to the water. One of the best Flora preserver I have used and found beneficial is a few drops of Formula 20 in your container when arranging your Orchids.

Using a small shallow container, a pinholder should be fixed by placing small knobs of florist plasticine on the bottom of the pinholder, which is then pressed down hard onto the container with a screwing motion. The pinholder and container must be absolutely clean and dry or the plasticine will not stick.

First make the Outline with the tall fine driftwood. The height should be about one and a half times the width of the container not less but if it is fine material it may be more. Place it about two-thirds of the way back on the pinholder, the Golden Pine cypress and driftwood be placed one on each side of and close to the first. The spray of Phalaenopsis orchids may be placed in front of the driftwood, pieces of cypress are needed to give weight to the base, not forgetting to put some orchids and foliage to flow forward and recess others to give the arrangement a third dimension and depth. Some filling in material can be recessed round the orchids. A simple basic design of driftwood will last and retain interest for many months with a few orchids and leaves which can be changed when necessary, other genera may be used, thus conserving time and energy.

To get the full measure of pleasure
Share it with someone else.

Australian Orchid Review

PUBLISHED QUARTERLY

Volume 39, No. 3 75 cents September, 1974



Miniature cymbidiums and polymins
Top centre is Miniature *Cymbidium* Putuna 'Showpiece'
See article in this issue

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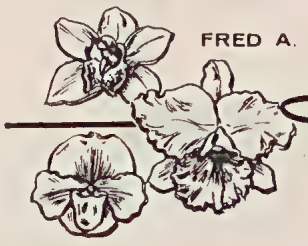
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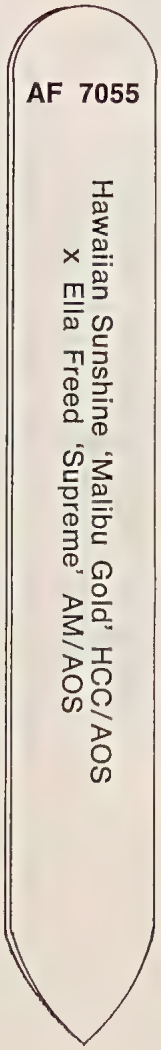
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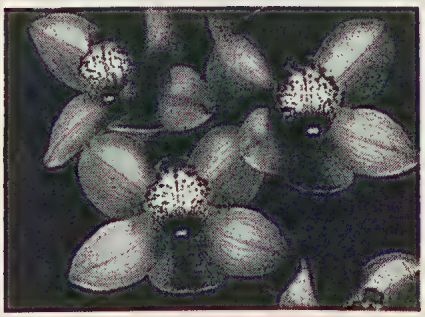
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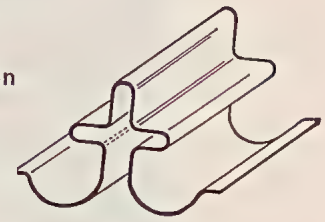
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Here is a truly exceptional orchid. Tall erect spikes of 10-12 blooms of pure ivory white with tiny spotting on the lip. Blooms measure 5 in. across petals and they open in JUNE. Texture is fantastic as last year's spike, opening in June, was still in good condition in September. We are using this clone in our breeding programme successfully.
Limited number of 8 in. leaf length mericlones $12.50 each.

FARMINGDALE 'TREVA' AM/A.O.S. —

Reserve Champion 1971 Santa Barbara Show and Best Seedling that year. This is a crackerjack orchid. Tall erect spikes of 4.8 in. flat blooms of a delightful clear green, carried 14-16 per spike. Lip is prettily marked red with apricot-orange flushing. Our parent plant is flowering late October this year.
6 in. leaf length mericlones $10.00 each.

LAGOON 'ST. MELITA' AM/A.O.S. —

There is no lovelier orchid than this one. Was Grand Champion at 1971 Santa Barbara Show. St. Melita carries 14-20 blooms per tall erect spike and the flowers are 5 in. across petals, perfectly displayed and of heavy texture. Flowers usually open in mid-August. The colour varies — if shaded in bud stage the tepals are a soft pastel green with concolor lip except for faint pink flushing around its edge. Unshaded the blooms are all over creamy white. This one is currently my favourite cymbidium.
6 in.-8 in. leaf length plants $10.00 each.

KHYBER PASS 'ROWES RED' —

This is one of the best true red cymbidiums that we have seen. 4½ in. flat shapely blooms of a very even bright red with a lovely broad, well displayed lip heavily marked in deep red on a cream background.
6 in. leaf length mericlones $10.00 each.

MUSITA 'ELANORA' —

Here is one that you could not resist. Overall colour is deep wine red — one of the deepest colours of all. Lip is of white background prettily marked black-red. This striking combination is a real eye-catcher and the large 4¼ in. blooms are carried 14 to a strong slightly arching spike. A strong growing plant for this colour range.
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SEPTEMBER, 1974 VOLUME 39 No. 3

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Orchid names: A species of orchid has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

There were not many miniature cymbidiums around when this picture was taken in 1966. So a specimen plant such as the large *C.* which dominates the centre of the illustration was a real talking point. The display was set up by Mr. Syd Monkhouse at a Spring Show of the Orchid Club of South Australia. For the interesting story of minicyms turn to Mr. Monkhouses's article on page 124. Mr. Monkhouse laments the lack of Awards for miniatures, however, the ice has been broken in N.S.W. by an Award of H.C.C. to a Novelty Cymbidium, bred from *C.* Fred Stewart and *C.* Showgirl, as we go to press. Full details next issue.

Loss To Orchid World



The late Mr. Leo Giles

With the sudden demise on May 27, 1974, of Mr. Leo Giles, passed on one of the great personalities of the Orchid World. During his lifetime Leo amassed many Honours, amongst them being one of the first to be awarded Honorary Fellowship of The Australian Orchid Council in recognition of outstanding personal service in the formation and promotion of The Australian Orchid Council.

For outstanding services to The Orchid Society of New South Wales, he was awarded The Society's Gold Medal and Life Membership. A Member of the Orchid Society of New South Wales Committee he served for many years and served a term as Vice-President.

As a Senior Judge he took a great part in the training of future judges and during the period when uniform judging between States was being formulated he travelled extensively between States.

A staunch supporter of the Eastwood Orchid Circle, he served on the Committee for many years and a term as President. He was honoured with Life Membership and was elected Patron of this group.

As a Member of the Sixth World Orchid Conference Working Committee, he worked tirelessly as Chairman of the Publicity Committee which in no small measure ensured the success of this great Conference. Perhaps his greatest triumph was his ability to raise funds when needed and his generosity certainly inspired others to do likewise.

He will be remembered for years to come as the Founder of Wondabah Orchids and a hybridiser of world-renown. The countless medals and awards granted to this firm is a fine tribute to his efforts.

A keen fisherman who liked to spend his leisure hours at his cottage at Conjola on the South Coast and shared his leisure with orchid societies in that vicinity where his efforts were much appreciated.

Honest and straightforward in all his dealings his word was his bond.

To his good wife and family goes the deepest sympathy of all orchid lovers and everywhere he was known.

The Orchid World has lost a great friend and personality and myself a dear and proven friend.

VALE LEO GILES

Frank Slattery

TRIBUTES TO SOME FINE PEOPLE

With sincere condolences to their families tribute is paid to other well-known orchid figures who have recently passed on.

MR. CECIL CAMBOURNE

The late Mr. Cambourne was a foundation member of the Orchid Society of N.S.W., and, in association with Mr. A. B. Porter, one of the earliest to raise seedlings asymbiotically in this country.

MR. GEORGE HUNT

An orchid grower for sixty years, at Coraki on the Far North Coast of N.S.W., he had a unique species collection and helped found the City of Lismore Orchid Society. His early century photographs of the Richmond River have historical significance and recognition. Mr. Hunt was well-known for his humorous Christmas cards on an orchid theme.

MR. DOUGLAS ADAMSON

A very early member of the Orchid Society of N.S.W. He remained an active member of the Eastwood Orchid Circle until his death at the age of seventy-eight.

MR. JOSEPH WOODS

The late Mr. Woods was Secretary of the Illawarra Orchid Society at the time of his death. He was a loyal worker for orchids and his fine sense of humour will be sadly missed.

MR. RON GERARD

A member of the Sutherland Orchid Society and the Orchid Society of N.S.W. the late Mr. Gerard was a fine grower noted as a pioneer in the Odontoglossum Alliance.

SOIL REACTION — pH

CONRAD SKIMINA
Research Director, Monrovia Nursery Company, U.S.A.

Abridged from *Cymbidium Society News*. For further information refer to issue of January, 1967.

Soil reaction is of considerable importance for the well being of a plant, for the physical nature of some soils and the biological population in the soil. For example, soil pH may determine the *quantity* of available plant nutrients, the *quantity* of toxic substances in solution, the *kind* of micro-organisms populating the soil medium, the *physical structure* of some soils and finally the *acidity* or *alkalinity* of the medium. To really understand the scope of pH requires a knowledge of chemistry, physics, microbiology, mineralogy and agronomy. I will attempt to explain some of the effects of pH as well as causes that determine a particular pH.

TECHNICAL TERMS

The scientifically experienced can skip this — it may save others from having to rush to a dictionary.

Adsorption. The adhesion of molecules to surfaces. Not to be confused with absorption which is movement of molecules due to turgor pressure or osmotic pressure.

Chlorotic. Failure to make sufficient chlorophyll, thus leaves lose greenness and become yellow.

Ion. One of the components into which electrolyte is broken on electrolysis: the *Anion* the electro-negative component chemically attacking the anode, and the *Cation,* the electro-positive component, the cathode.

pH7. When the anions and cations are in balance the concentration of positively charged hydrogen ions (H) and negative hydroxyl ions (OH) results in a neutral solution neither acid nor alkaline. In this state the quantity of hydrogen ions equals 1×10^{7} grams of ions per litre. For convenience this is expressed as a whole number by taking the logarithm of $\frac{1}{1 \times 10^{7}}$ which happens to be 7.

pH scale. This extends from 1 to 7 on the acid side and 7 to 14 on the alkaline side. Because each figure is a logarithm of 10 it represents a power ten times greater than the next nearest one to 7.

What is pH?

First of all pH denotes the degree of acidity or alkalinity or denotes the proportion of hydrogen ions (H) to the hydroxyl (OH) ions in solution. Distilled water is neutral, pH 7.

A change of one unit of pH, for example from pH 6 to pH 7 is tenfold; from pH 5 to pH 7 is 100 fold and so on. Therefore, a soil medium as pH 6 is ten times more acidic than one at pH 7 and at pH 5 it is 100 times more acidic than at 7. So you see, a soil medium at pH 4 is considered very acid — it is 1,000 times more acid than at pH 7! (see Fig. 1).

To understand pH, one should understand cation-exchange capacities of soil media. The exchange capacity of a soil it its ability to hold exchangeable ions. Soil media have different exchange capacities depending on their make-up. A bark would be different from a clay, and different from humus and different from sand. A clay or organic soil has a higher capacity than a sand. Positively charged ions such as hydrogen, calcium, magnesium, potassium, sodium and so on are attracted to negatively charged clay particles, organic particles, humic acid, and so on. This is called adsorption. The greater the amount of hydrogen held in relation to the other cations such as calcium the greater the acidity or lower the pH. Since the ability to hold ions is different in different media, wouldn't it then follow that to change the pH from 5 to 6 of a peat it would be different than doing the same thing for a sand? It takes considerably more lime to change the pH of a peat or clay than it does to do so for a sand. Likewise, the exchange capacity varies for the type of clay, amount and degree of decomposition of organic matter, and the amount and size of sand. Most people think of clay as a mass of sticky, gummy matter — yet the individual particle of clay is so small it is invisible to the naked eye! Even a "100%" bark medium has some clay-size particles present.

What causes a soil to change its pH? There are many factors which result in a

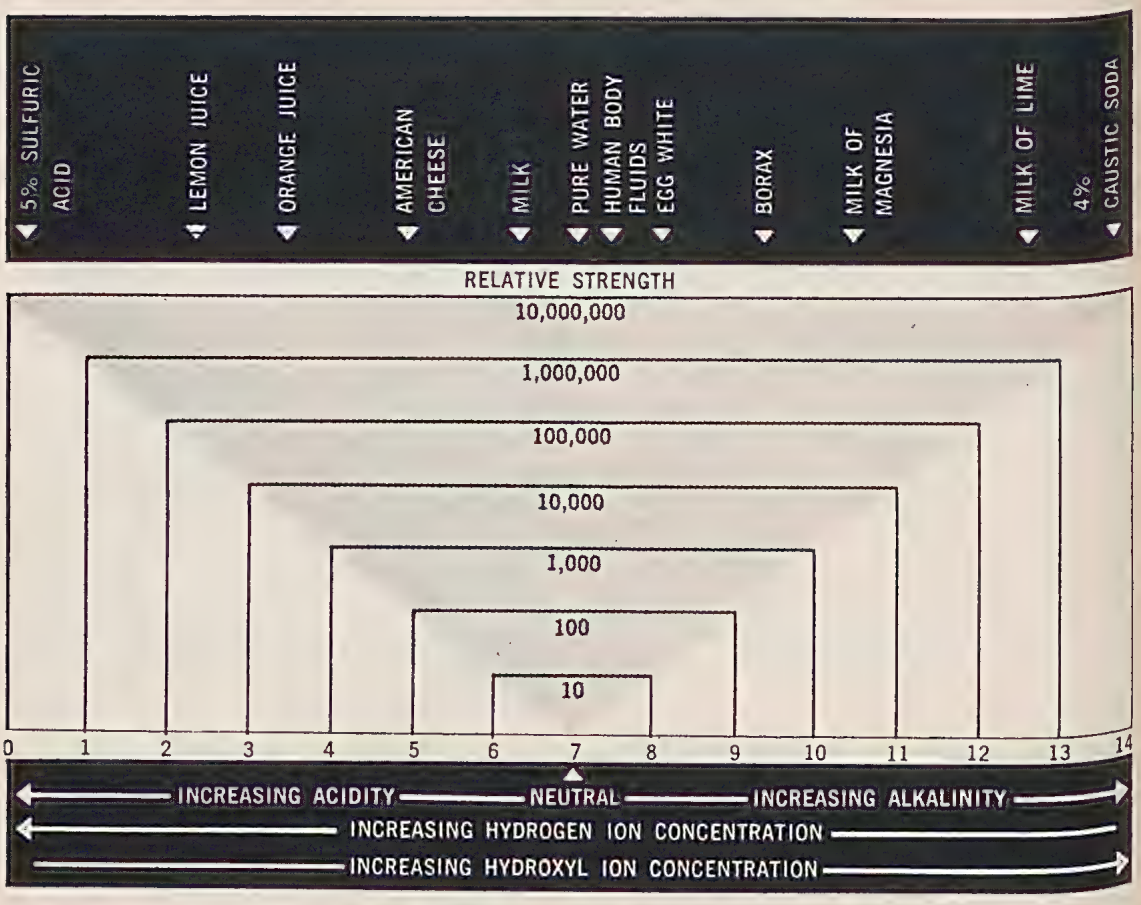


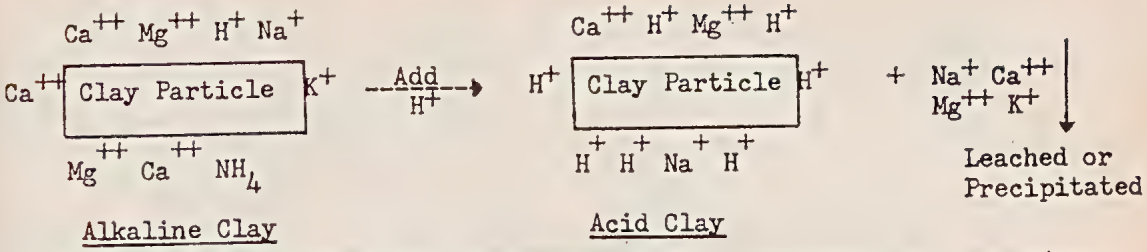
Figure I: The pH scale and relative strength.

change in acidity or alkalinity some of which are:

1. The pH, composition and amount of the irrigation water — and the amount of rainfall.
2. The amount and kind of fertilizer used.
3. The kind of soil parent material.
4. The solution of carbon dioxide and other gases in the medium.

To explain in further detail, applying a water having a pH of 7.5 will gradually raise the pH of the soil as a result of neutralisation by the water. If the positive ions in the water are predominantly calcium and magnesium, these will precipitate or become a*d*sorbed on the colloidal fraction (clay-sized particles) displacing some of the hydrogen or other cations present. If it is sodium, it can also displace other cations, but its ability to displace hydrogen is less than that of calcium or magnesium. Also, sodium forms soluble salts so that sodium can be leached easily whereas calcium and magnesium are much more difficult to displace.

The pH of a medium can change because of the addition of a fertilizer. The use of sodium or calcium nitrate will tend to raise the pH. The reason here again is the result of displacement of hydrogen with calcium or sodium through mass action and the leaching of hydrogen and nitrates or their consumption by plants or other organisms. The salt of the fertilizer itself can be acidic. For example, ammonium sulfate is an acidic salt. It is composed of a weak base (ammonia) and a strong acid (sulfuric). Salts of equally strong or weak bases coupled with equally strong or weak acids respectively are usually neutral or close to it. The reason why ammonium sulfate is such a good acidifier is the result of another factor — and that is the presence of the ammonium ion. One ammonium ion converted by nitritation and nitratation bacteria gives rise to one nitrate ion. If you remove from solution a base such as ammonia, the solution will gradually become more acidic. This nitrate ion forming can be thought of as coupling



Symbols: Ca: calcium, Mg: magnesium, NH_4: ammonium, K: potassium, Na: sodium, H: hydrogen

Figure II: Absorption and displacement of elements on clay particles.

with hydrogen ion (of the water) and forming nitric acid. This nitric acid then dissociates into hydrogen ion and nitrate ion. This hydrogen ion can then displace calcium, magnesium, potassium, sodium and so on which may be present on the colloidal fraction and thus create a more acidic clay particle. Now from chemistry we know acids contain hydrogen. You can then think of a clay particle gradually adsorbing more and more hydrogen. It then becomes more and more acidic. Earlier we discussed that the acidity is determined by the proportion of hydrogen ion *ad*sorbed on the colloidal fraction in relation to other cations such as calcium. Humic acid is neutral when it reaches 100% base saturation (cations, other than hydrogen); montmorillonite clay is neutral (pH 7) at 95% base saturation; peat is neutral (pH 7) at about 75% base saturation, i.e. 75% of the ions adsorbed are bases, 25% are hydrogen. See figure II.

The kind of parent material has a lot to do with the soil pH also. A limestone derived soil would usually tend to be alkaline, although there are exceptions to this under certain climatic influences. Soils derived from certain minerals tend to become acidic because the weathering results in an acid condition. Peats become very acid except that sedge or reed peats could be alkaline especially around the perimeter of the wet areas where shells of snails tend to accumulate, or it may be alkaline due to the water which feeds the bog.

As decomposition of organic matter takes place, carbon dioxide is given off as a result of respiration of organisms. This carbon dioxide then dissolves in water forming carbonic acid which is a mild acid. This then reacts to dissolve certain minerals, or its hydrogen may displace adsorbed cations — or it may dissipate into the atmosphere. As rain falls through the air it picks up nitrogen oxides, carbon dioxide and so on, forming mild acids. It's no wonder then, that the acidic soils are usually found in wet climates and the alkaline soils in the drier climates!

The Effects of Soil Reaction on Soil Chemical Characteristics

Soil reaction has a profound effect on the solubilities of many compounds. In the many years of my experience with ornamentals, I found that a pH of 5.5 to 6.5 is the optimum range for most ornamentals. Many ornamentals that tolerate 7.5 well and seem to thrive at 7.5, often do much better at 5.5 to 6.0. The most pronounced effect of pH is observed with the solubility of iron. Iron hydroxide which forms almost instantly as a result of the addition of ferrous sulphate to a soil medium becomes less and less soluble as the pH changes from 5.0 to 6.0 to 7.0. Iron hydroxide is very insoluble at a pH of 6.0 or higher. This is one reason why iron loving plants such as azaleas should be grown at pHs below 6.0. In situations where the pHs are higher iron chelates are valuable because the iron is prevented from reacting with other elements or hydrolyzing in the soil to form precipitates.

Usually at low pHs, calcium and magnesium availability is reduced which may be the result of displacement of calcium and magnesium with hydrogen, and subsequent leaching. Soil media of low pH values usually are deficient in calcium or magnesium. Conversely, the media of higher pHs contain more calcium and magnesium, probably due to the fact that this is why the pH is higher in the first place — greater adsorption of calcium on the collodial fraction. At high pHs over 8.5 sodium or potassium may be displacing calcium, so that availability of calcium again is decreased as a result of leaching or precipitation as the carbonate.

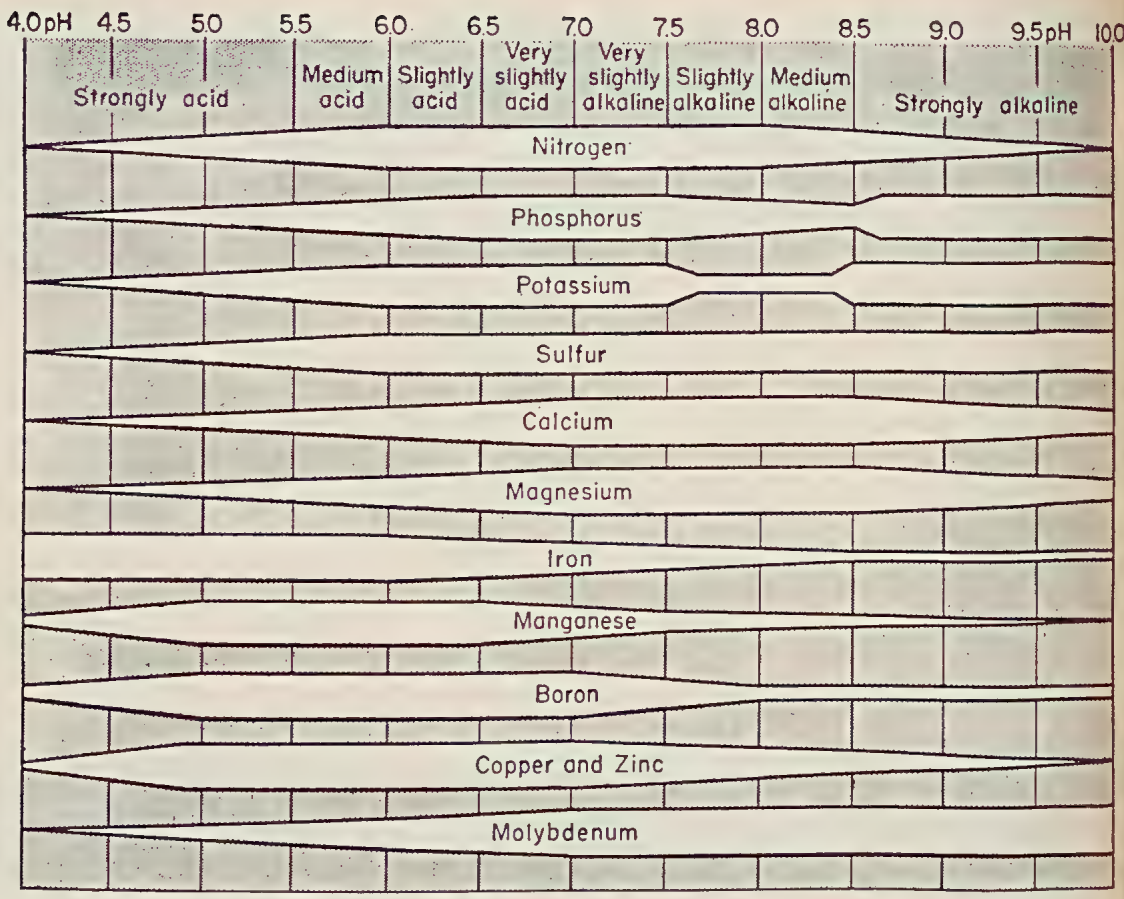


Figure III: Nutrient availability and soil pH relationships
Thickness of bar denotes amount of nutrient available.

See figure III for a visual description of the availability of plant nutrients.

The Effects of Soil Reaction on Plants

As the soil pH changes from 8.0 to 7.0 and lower, the availability of many elements is increased, with the result that the plant is able to take these elements from solution more readily and therefore would be less apt to become chlorotic. The elements have to be in solution before a root can take it up. As the pH becomes lower and lower, calcium, magnesium, potassium and phosphorus are reduced in availability, and there is an increase of such elements as aluminum.

Aluminum may be in toxic quantities in soils at a pH below 5.0. Also, because there is a reduction in the calcium, magnesium and potassium uptake, plants become weaker stemmed as a result of less calcification of the cell walls. Weak stems are the result of weak or thin cell walls. Such plants become semi-prostrate when normally they would be uprights. I have seen this often — the *form* of the plant changes as a result of pH.

Another bad effect as a result of low pHs and the usual corresponding lack of calcium in tissues is the pre-disposition of the plant to infection. Plants lacking calcium develop topical diseases and root diseases more readily. Calcium is necessary for new root tip growth. Lack of calcium may result in a sloughing-off of root tips allowing a zone of infection to start.

The Effects of Soil pH on Micro-organisms

Soil pH will influence the population distribution of soil micro-organisms. For example, low pHs favour fungi, higher pHs favour bacteria.

As the pH changes from the 4's to the 6's *Actinomycetes* and bacteria increase, fungi decrease. Continued use of acid fertilizers will favour fungi. In determining numbers of fungi on media often the pH is kept low (4.0)

to eliminate most bacteria. By favouring the production of *Actinomycetes,* one favours the natural production of antibiotics. Streptomycin, aureomycin, terramycin and neomycin are produced by *Actinomycetes.* These are the organisms between the fungi and bacteria.

By changing the micro-organismal population in the soil, you may change the chemical distribution in the soil. Since lower pHs eliminate nitration bacteria, ammonia may accumulate in such soils. This could result in a toxic condition.

Ways to Change pH

If an alkaline condition needs to be changed to an acidic condition the following additions will tend toward acidity:

1. Iron sulphate†
2. Sulphur*
3. Phosphoric acid†
4. Acetic acid†
5. Mono-ammonium phosphate*
6. Sphagnum peat*

If calcium is needed, but little or no pH change is desired then the following can be added:

Calcium ammonium nitrate
Gypsum

If alkalinity is desired, add the following:

Calcite*
Dolomite*
Calcium hydroxide†
Replace ammonium fertilizers with calcium, potassium or sodium fertilizers*

*Gradual change results.
†Rapid change results (use with caution).

How to Measure pH

The usual laboratory method is measuring ionic activity by electrical potential. This involves using a pH meter where electrodes are inserted into the solution to be tested, and measuring this potential. The soil sample is prepared by adding a small amount of soil, or other growing medium to a small beaker or paper cup. A 100 cc beaker is convenient or similar size paper cup which will adequately clear the electrodes being inserted. A portion of soil or other growing medium is added to the beaker, and sufficient distilled water applied to saturate the sample. With inorganic soils a thick mud results when this point is reached. With organic matters such as peat or bark, the sample is saturated, stirred and then pushed down with a glass rod to firm the organic matter and eliminate air pockets. Sufficient water has to be added to fill voids with water; air pockets will throw the readings off.

Instructions are always included with pH meters for proper operation of the instrument. Prices of these meters usually vary from $130 to $900. There are many makes on the market.

Another much less accurate method of pH measurement involves the use of colour indicators. There are reagents on the market which give specific colour change for certain pH ranges. Kits are available for such tests.

The least accurate method is the use of indicator papers such as litmus or Hydrion which indicates colour change of the tape immersed into the solution to be tested.

There are other procedures for preparation of samples for pH measurement, such as 1 part soil to 2.5 parts water and so on. The amount of water added to sample will alter the reading slightly. I prefer to use the saturated sample procedure because this more closely resembles the natural condition in the soil and saves time. Nevertheless, whatever procedure is followed it should be adhered to for uniformity and standardisation.

Fraternal Night at Five Dock

JOYCE DUNCAN

On Wednesday, July 24, Five Dock celebrated its seventh birthday in the R.S.L. Club. Over two hundred members and friends came along to celebrate the occasion. There was a superb benching of orchid blooms which with a good supper and magnificent birthday cake ensured that all had a most enjoyable evening.

Our guests represented the R.S.L. Sub-Branch, the R.S.L. Club and the Auxiliaries associated with the Five Dock R.S.L. Club. In addition representatives of the Orchid Society of the N.S.W. and almost every metropolitan Orchid Society were welcome guests.

Special prizes were given in what was to all intents and purposes a winter show. Mr. Ray Dean won the "Best Orchid of the Evening" with a beautiful *Cymbidium* Arcadian Melody x *C.* Cleo Sherman. This orchid could have won a Spring Festival.

As far as the Members were concerned the main trophy was the Arthur Priest Memorial Trophy which was won by Mr. C. Robinson with *Cymbidium* Pinafore 'Comet'. This plant was also the prize winner in its class.

A feature of the night was the fraternisation that went on. Everyone was relaxed, the hall and its facilities enhancing the friendliness of the occasion.

Five Dock R.S.L. Orchid Society wishes to thank all those who came along and helped us celebrate our birthday and especially are we grateful to those who made the night one to remember by bringing such a variety of truly top class orchids.

The Charm of Miniature Cymbidiums

SYD MONKHOUSE

What is a miniature cymbidium? To my mind a miniature cymbidium includes any hybrid made between a miniature bulbed and/or miniature flowered species and another cymbidium. Also included are the progressive hybrids made from these initial hybrids and other cymbidiums and extensions of this line of hybridisation.

In miniature cymbidiums we have distinct sections, viz. true miniatures in all respects and novelties which term embraces all others.

A true miniature cymbidium is one which is small in both flower and bulb. It seems impossible to describe them otherwise, and, to try to split the round filled-in shapes and the perky rabbit-eared types is making things just too complicated. Shape is not a very important facet with these types, but overall charm definitely is.

The novelty section including all plants with flowers above 2½ in. petal spread or with small flowers and large bulbs such as *C. madidum* hybrids, or large flowers and small bulbs such as the *C. tigrinum* hybrids. It definitely does not include scruffy or stunted standard cymbidiums, and to make sure that these cannot be included the hybrid must have at least one miniature flowered or miniature bulbed species in its "family tree".

Many critics of miniature cymbidiums state that a novelty cymbidium is no better than a very weedy standard hybrid. I think that a similar comparison would be to say that a dachshund was just a poorly developed greyhound. Nature has a way of making sure that a cymbidium with miniature lines bred into it looks as though it "belongs". Its flowers and plant growth match, whereas a very poor standard cymbidium is and looks a failure.

Probably the blame(?) for the first "miniature cymbidium" crossing must rest at the door of Mr. R. I. Measures who made the crossing of *C.* Lowgrinum (*lowianum x tigrinum)* in 1903, not very long after the first recorded cymbidium hybridisation by Messrs. Veitch.

C. tigrinum is a species of largish flower with small bulb growth and certainly has contributed some lovely concolor yellows to the miniature field.

In 1911, Veitch used the pendulous spike miniature *C. devonianum* with *C. lowianum* to produce the second miniature hybrid C Lang'eyense. At this stage I suppose the idea of creating a miniature flower and plant was not the plan, although it certainly was the result.

The year 1919 saw the introducing of *C. dayanum* as a miniature species by Mr. H. Smith and in the same year a Mr. Holford must have been one of the first hybridisers to definitely plan a miniature hybridisation with *C.* Brownie, using the first generation miniature *C.* Lowgrinum with another miniature species, the white flowered *C. parishii*.

Mr. Cowan introduced *C. pendulum* to the list of miniature species being used, his hybrid *C.* Mona *(C. pendulum x C. traceyanum)* registered in 1924.

Several more miniature crossings were made with previously used parents but in 1932 Mr. Bultel introduced *C. aloifolium* to the list. This same year Holmes registered the first second generation hybrid *C.* Phil anderer (*C.* Langleyense x *C.* Lowio-grandiflorum).

The Stuart-Low nursery registered C. Alexanderi x *C. devonianum* making C. *Dingleden,* 1933, but a long lapse occurred until the ultimate introduction of the hybridisation which was responsible for putting the miniatures on the map.

This monumental step saw the introduction of the Chinese miniature *C. pumilum* and Alexander coupled this with *C. insigne* to give the famous *C.* Minuet. This did not occur until 1942.

C. pumilum, a miniature plant in both growth and flower, of a brownish to russet colour, and its variety *'album'* of a pale green shade are in the background of most of the miniatures of today.

Even then, miniature cymbidiums did not immediately hit a wave of popularity with only isolated crossings being made by Hirose, McBeans, and a notable crossing *C.* Jean Brummitt (*C. devonianum x C. eburneum*) by Brummitt, in 1944, Dorset Orchids and Sanders.

In 1955, the start of the great miniature cymbidium stampede began with so many

sings being made in the years from that to now that we cannot possibly comment all.

ybridisers such as Fred A. Stewart and Blowers began the rush, most notable the crossings being *C.* Sweetheart (*C. ilum* x *C.* Alexanderi) by Arno Blowers 955, using both the diploid and tetraploid ns of *C.* Alexanderi.

he birth of a new kind of miniature red in 1956 with Mr. Ikeda registering Oiso *(C. pumilum x C. ignota)* which has given birth to the very popular Japanese ch of these lovely cymbidiums.

Peter Pan (*C. ensifolium* x *C.* Miretta) registered by Dos Peublos in 1957 and duced yet another intriguing field in the s. This was the habit of twice per year ering and also successfully flowering in ical areas. With such attractive properties a wonder *C. ensifolium* has not been more frequently.

pumilum hybrids occur with monoto- s regularity right through the miniature id lists and pretty well all hybrids re- ered with this parent are worth growing. ctual miniature registrations between 1956 1970 totalled 289 compared with a e 25 up to 1956, therefore, a true in- ation of the upsurge of hybridising in field can be gauged.

n 1960, the first *C. canaliculatum* hybrid Odyssey (*C.* Eagle x *C. canaliculatum*) registered by Fred A. Stewart. This Aus- an miniature flowered species represented ew and very interesting addition especially n the dark *C. canaliculatum* var. *sparkesii* used. Possibly owing to difficulty of idisation this species has only been used ingly so far. However, several hybrids e received awards in the U.S.A.

The year 1962 saw the first hybrid made the Australian species *C. madidum.* s was *C.* Torette (*C.* Dorchester x *C. idum*).

C. madidum, at first thought to be a failure a miniature parent because of its large nt size, has turned out to be a real derella.

Very rigorous plant growth certainly is sed on but the hybrids, in many cases, ibit extremely long attractive spikes of y long-lasting flowers produced at several es during the year. The flowers in all es are miniatures.

Quite interesting work in a slightly different niature cymbidium field has been done by Graves, using oriental species such as *C. hoosai,* and Mary B. Ireland using *C. kanran* and *C. simulans.* The so-called Japanese-type miniature crossings have an attraction of their own. Rather spidery, striped blooms on erect spikes, the plants exhibit flax-like thin leaf growth and the perky flowers often have a very delightful perfume.

Crossing between miniatures and standard cymbidiums have been quite prevalent, giving rise to the commonly called "second-generation" miniature hybrid. Generally, the small size of flower is retained. However, a few have produced blooms too large for common ideals of miniature cymbidiums. In most cases the "second-generation" blooms are heavier textured and more "filled-in" in shape than the miniatures with a miniature species as a direct parent.

Keith Andrews Orchids made many interesting crossings including the first fourth-generation hybrid *C.* Moon Bug (*C.* Shannon x *C.* Plush) in 1969 along with another interesting primary hybrid *C.* Scallywag (*C. pumilum x C. suave*) in the same year.

Certainly the current hybridising trends in combining miniatures with miniatures is the ideal situation where the small flowered cymbidium becomes a breed of its own with no further reliance upon the standard cymbidium except in the necessity of infusion of a new colour.

Mr. Paul Miller has probably done more for the development of miniature cymbidiums than any other person. Amongst his very many registrations are *C.* Cameliard (*C.* Sweetheart x *C.* Angela); *C.* Carlton (*C.* Sweetheart x *C.* Indio); *C.* Divien (*C.* Sweetheart x *C.* Adrienne); all registered in 1969; *C.* Orkney (*C.* Sweetheart x *C.* Clyde Landers); *C.* Dagonet (*C.* Sweetheart x Etta Barlow) and the pure miniature crossing *C.* Meliodas (*C.* Geraint x *C.* Showgirl) a few of the 1970 batch.

Registered crossings since 1970 have included some very interesting combinations including:—

Alcor — *C. simulans* x *C. canaliculatum*
Buttons and Bows —
C. sinense x *C.* Stanley Fouraker
Chlorey — *C. chloranthum* x *C. erythrostylem*
Minnehaha — *C. devonianum* x *C. sinense*
Evonne — *C.* Esmeralda x *C. suave*
Wakaba —
C. Eburneo-*lowianum* x *C. virescens*
Freshie — *C.* Paulwelsii x *C. finlaysonianum*

Francis Hunte —
C. madidum x *C. finlaysonianum*
Hossailum — *C. hoosai* x *C. pumilum*
Jissy Mupp — *C.* Wood Nymph x *C. pumilum*
Sunshine Falls —
C. King Arthur x *C. madidum*
Jane Moulton — *C.* Mary Ann x *C.* Oiso
Sarah Jean — *C. pumilum* x Sleeping Beauty
Tigris — *C. tigrinum* x *C.* Balkis
Viresprite — *C. virescens* x *C.* Snow Sprite

This selection indicates a fair number of new cymbidium species used which should widen the mini-cym. spectrum considerably. Of course, many other hybridisations have been made during this period but we cannot comment on them all.

A look at "newer" species used to influence miniature inheritance is of interest:—

C. simulans — From Burma, Sumatra and Java — pendulous spikes of small buff blooms with broad purple mid rib to petals. Summer blooming. Suitable for hot climates.

C. sinense — Chinese — Erect spikes of fragrant blooms of 2 in. width. Deep brown to brown-purple with yellowish lip. Autumn blooming.

C. chloranthum — Malay Peninsula to Borneo. Erect, stout spikes of 2 in. blooms of pale green. Purple spotted green lip. Summer flowering. Suitable for hot climates.

C. suave — Australian species. Thick leaves and pendulous spikes of pale green miniature blooms.

C. finlaysonianum — Malaya — Long pendulous spikes to 4 ft. with 2-3 in. flowers. Tawny red tepals with deep wine red lip. Summer flowering. Suitable for hot climates.

C. hoosai — Chinese species. Tiny plants with small pert blooms of pale fawny-green. Fragrant. Many variations.

C. virescens — Japanese species — Single flowered spikes of tiny green blooms produced in Spring.

C. Oiso — A primary hybrid with *C. pumilum* — Tiny pert flowers on erect stems. From red to palest pink.

Certainly is is very gratifying to see more cymbidium species being introduced to the field although at least two generations should be flowered before their true influence can be gauged. The minis have been hybridised for only two generations whereas standards are now in their seventh or eighth generation in many cases.

It is amazing that of the total of 64 species in the cymbidium genus only about 17 of the larger flowered species and five of the miniature species have accounted for the greater number of hybridisations made.

For future hybridists, not only have they the duty to carry on lines of breeding started by the pioneers in this fascinating field of minis but they must experiment with more of the known species which have been used sparingly, or not at all, in an endeavour to create an inheritance for their successors.

Of course, whether the hybridist is successful or not, is decided by the orchid judge. Only through the granting of awards to outstanding hybridising results can the breeder obtain the reward, the publicity and the status so important to his business and his future endeavours.

Unfortunately in Australia not one award has yet been given to a miniature cymbidium orchid under its specific classification, to my knowledge. Minis have been with us for years — why then have our judges not seen fit to recognise any of the outstanding ones yet?

My first reason is an observation that many judges interpret our standards to mean that a miniature cymbidium has to be produced as a specimen plant before it can be even considered.

Secondly, judges often pay more heed to the state of the leaves or bulbs than they do the actual bloom.

My advice regarding the first point, is that judges can and should, under our present points, consider a smaller one or two bulb miniature for award even if carrying only one or two spikes. A one bulb plant with one spike is just as floriferous as a six bulb plant with six spikes!

To the second factor — It is important for a miniature to look neat and tidy as a plant, but we will never see a large plant that has no back bulbs or no cut-back leaf tips. We must be reasonable.

By far the most important aspect of miniatures is their charm and it is this feature that makes them one of the most popular of all orchid forms. Because of this, how else can they be judged except by the true appreciation system.

Lastly, my acknowledgments to Paul F. Miller and Lee Ray Rowland for data on miniature cymbidium breeding.

Briardale Road, O'Halloran Hill, S.A. 5158

WORLD ORCHID CONFERENCE

Australian Tour Details

A meeting of interested persons in connion with the official tour to the Conferce took place in Sydney prior to the nthly meeting of the O.S. of N.S.W. on h July, 1974. From this it became appar- that our quota of accommodation for 60 ons at the Intercontinental Hotel at nkfurt will be over-taxed and any late strants may have to be accommodated where. It is important, therefore, if you seriously contemplating joining the party, you make a firm booking with Miss kie Pearson of Paxtours Holidaymakers Ltd., 90 Pitt Street, Sydney, N.S.W. 0 and for this purpose pay the deposit 150.

f the tour time is too long, or you want make some special arrangement (subject our tour being for not less than 34 days) should contact Mrs. Alina Jarvin, Robert ton (Travel) Pty. Ltd., 14 Cosmopolitan tre, Knox Street, Double Bay, N.S.W. 8.

ust in case you are not familiar with the eral outline of the itinerary, this will be ewhat as follows:

epart Sydney to Honolulu, then the nd of Maui to see ascocendas and vandas, then to San Francisco, then to Frank- after the Conference by coach to Hol- Belgium, France for several days in is, then England and Scotland, then penhagen, Vienna, Athens, a four day trip und the Grecian Isles and return home Hong Kong.

n many of the places we will be received the official Orchid Societies or at such ld famous nurseries as Mrs. Ratcliffe's phiopedilums), McBean's (cymbidiums odontoglossums), etc., etc.

he party will include our President, Jim, also Brenda Mackinney and many other minent orchid people and members of the ty will have the opportunity of meeting ny interesting people from all around the rld.

But, remember, these visits to orchid series and Societies are available, but not mpulsory. You will not be regimented in way.

W. R. Smoothey, 15 Merlin Street, Roseville 2069

INVITATION TO SPEAK AT 8TH W.O.C.

Orchid authorities wishing to lecture at the 8th W.O.C. are invited to send details of their proposed topic to the Chairman of the Lectures Committee, Dr. Wolfgang Haber. Dr. Haber was for many years Editor of *Die Orchidee,* official publication of the German Orchid Society. He was in Sydney for the 6th W.O.C. and will be well known to many Australians. Address your application to Dr. Wolfgang Haber, c/- 8th World Orchid Conference, Seismayerstrasse 61, Palmengarten, D 6 Frankfurt (Main) 1, Germany.

N.S.W. REGIONAL CONFERENCE

There's still time to register for the Second N.S.W. Regional Orchid Conference to be held over the October Holiday week-end, Saturday, 6th to Monday 7th inclusive. Newcastle Orchid Society is the Host Society and an enjoyable social programme has been planned. There will be plenty of orchids and orchid talk.

Send your $7.00 (per person) registration fee to the Conference Secretary, Mr. N. Hellier, 17 Stanley Street, Merewether, N.S.W. 2291 immediately. If you want a motel room booked add at least $5.00 deposit. Norm Hellier will send full details, or you can check back to page 84 of the June "A.O.R.".

NEWCASTLE ORCHID SOCIETY

25th Anniversary

The Newcastle Orchid Society recently celebrated their 25th Annniversary meeting. Foundation members were especially invited to attend and we were delighted to see so many of them attend.

Our special festive supper featured a large anniversary Cake.

Our Guests told us many tales of the trials and tribulations of the early days of our Society. It was especially heartwarming to see the original Ladies' Committee all together again for the first time in a good many years. They raised many laughs relating amusing incidents stretching back 25 years.

Mr. and Mrs. Norm Lawrence of St. Ives were called upon to cut the cake.

The evening was a very enjoyable one, proving that we should endeavour to get together with old friends more often. In fact we hope to do just that when Newcastle becomes the Host Society for the 2nd N.S.W. Regional Conference on the Holiday weekend 5th, 6th, 7th of October, 1974.

Paphiopedilum Boxallii

ALLAN STILES

Several years ago, after answering a newspaper advertisement, I purchased for $3.00 a large clump of a Paphiopedilum from a man who simply described it as "one of the common ones". To me it looked like *villosum* but when it flowered it was identified by my friend, the late Mr. Reg Leaney, as *boxallii* which, he said, we used to bring in cheaply from Burma before the war. I was pleased to have this extra species in my collection and at that time did not realise its rarity since no orchids have been permitted to be exported from Burma for many years. It was not until I began corresponding with growers in the U.S.A. that I discovered that this plant was in short supply and that, at current nursery prices there, my clump was worth $1,000! This lucky find enabled me to benefit from several welcome swaps for other rare species.

Other plants of *boxallii* have come to light in Australia as well. A Western Australian grower has had one for many years. Mr. Frank Slattery found that one of his *villosums* was in fact *boxallii*. I also noticed a small plant of it in the South Australian exhibit when the W.O.C. was held in Sydney. It was almost hidden from view and had obviously only been intended as a "fill-in". No amount of asking could find its owner.

These four plants and Mr. Leaney's remark led me to wonder how many other plants of *boxallii* there may be in this country, possibly neglected because of ignorance of their worth and probably labelled *"villosum"*.

Paphiopedilum boxallii is a native of Moulmein, Burma, where it grows as an epiphyte, with its roots in mosses and ferns on tree branches in just the same way as *villosum* does. It is really no more than a variety of *villosum*, having a number of black spots on the dorsal petal. Botanists have not been able to agree (and still do not) about whether it should be considered to be a separate species or not. Chromosome counts of an ordinary form of *villosum* and the *boxallii* form have shown them to have different numbers of chromosomes* but in view of the wide variation between clones of these two types of plants and the fact, observed some time ago by Mrs. Helen Adams, a noted Paphiopedilum breeder in the U.S.A., that these variations gradually lead from the spotted *boxallii* to the clear colour *villosum* form, I am inclined to believe that these are extremes of one race of plants, which, like all living things, show variations between individuals. The appearance of these plants when not in flower is the same.

Many hybrid paphiopedilums have heavy spotting on the dorsal petal and in many cases this can be attributed to *boxallii* which was often used in early breeding programmes, particularly the variety *atratum*.

Paphiopedilum villosum itself is a widespread species and has been collected not only in Moulmein but also in northern Burma and the adjacent part of India, Thailand, Vietnam and probably it occurs in the countries of Laos and Cambodia between these. A similar species, *P. affine*, has been described from Tonkin which may prove to be only another variation on the *villosum* theme. Recently, a plant obtained from the Chinese mainland (where several species not in cultivation outside China have been described) has been tentatively identified as *P. affine*.

It seems a pity that *villosum* has been neglected by growers for so long because a well-grown plant with several flowers is a very showy thing indeed, having large, long-lasting, glossy flowers. Maybe it is simply the fact that it is so easily grown (it will thrive in a bush house in Sydney) that has caused familiarity to breed contempt

In these days of revived interest in the wonders of nature's plants, in contrast with man's mutants, it is high time we looked at the long neglected plants under the benches or pushed to the back of the shelf. Who knows, perhaps the rare *boxallii* will be among them?

*A.O.S.B. Vol. 18 (pp. 99-104).

MELBOURNE INVADERS MOVE NORTH

Mr. Jim Rentoul, well known orchid writer and publicist, and Mr. Russell Martin of McBean's, have both made commando-like thrusts into northern New South Wales in recent weeks. The invaders, far from being resisted, have been received with red carpts by local growers and societies. Both gentlemen have given freely of their time and knowledge to all, proving the adage that an invading culture can be beneficial.

Tetraploid influence in recent breeding of Cymbidiums



1. *C.* Pearl Easter 'McBean's'.
This spontaneous tetraploid has had a profound influence upon the evolution of modern hybrids. Strong points are the desirable labellum, good texture, and vigour. Weak points are the pointed tepals and gaps between the lateral petals and sepals. It is a progeny of *C.* Pearl x *C.* Dorchester, a cross registered in 1951 by McBean's.



3. *C.* Sylvania 'Sonnet'.
This cross between *C.* Early Bird 'Pacific' and *C.* Sheba was registered in 1970 by Alvin Bryant. In its immediate ancestry are five tetraploids. Note that the flower is rounder, the segments wider. Size is outstanding, the petals being 49 mm wide. It flowers at the end of June.

Photos supplied by Alvin Bryant.

2. *C.* Early Bird 'Pacific'.
Another spontaneous tetraploid from a cross between *C.* Edward Marshal and *C. erythrostylum* registered in 1946 by Sanders. 'Pacific' is a conal name used by Stewarts of California. Its value in breeding is due not merely to vigour and early flowering habit, but the fact that the downward pointing sepals offer potential to fill out the bottom section of the flower in its descendants.



4. In three to four generations from *C.* Pearl Easter 'McBean's' new crosses are producing flowers of the standard shown below. This as yet unnamed cross was bred by Dr. Van Dyke. One parent *C.* Stanley Fouraker comes from *C.* Early Bird x *C.* Alexander 'Westonbirt', and the other parent from *C.* Pearl Easter x *C.* Rosanna.



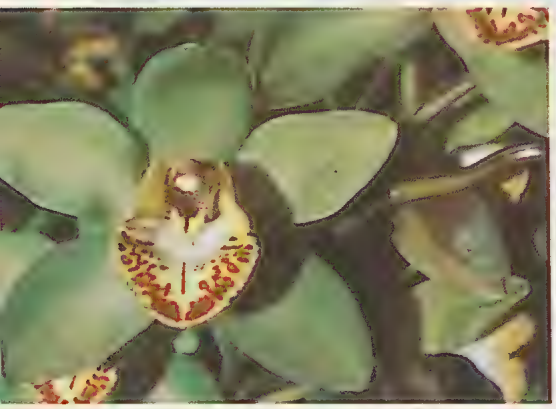
C. Stanley Fouraker 'Florentine'
x *C.* Mary Ann 'Simplicity'



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CYMBIDIUM

12" = 12" – 20" leaf length. 6
F. = flowering

Bud March 'Rosetta'
5" August yellow
Lagoon 'Mona Vale'
Outstanding Sept. show bench green
Sea Chanty 'Rosetta'
Late clear green with white lip
Mem. Robt. Casamajor 'Delmac'
Top show white
Sleeping Beauty 'Helen'
Best pure-colour yellow mericlone
Snowbird 'White Star'
Late June export and show white



WYANGA 'ELANORA'

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Maria Vasquez 'To

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Betty Conroy 'Orchid Conference' x Anne Cavaco 'Va
Anne Cavaco 'Valley High' x Self
(Vallemar x Anna Tham) 'Reynella' x Betty Conroy 'O
Conference'
Lavender Lady 'Profusion' x (Vallemar x Anna Tham)
Lavender Lady 'Profusion' x Self
Zadian x Lavender Lady 'Profusion'
Maria Vasquez 'Topaz' x (Vallemar x Anna Tham) 'Rey
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Paphiopedilum boxallii



Paphiopedilum villosum

Photos by Allan Stiles.

CYMBIDIUM DEVELOPMENT

ALVIN BRYANT

PART II

One of the factors delaying awareness of colour offering of the tetraploids has en the emphasis on shape development and recent years the spreading of the flowering ne.

The white champion has dominated the owbench; its progeny were commercially eable and when crossed with colour the our was diluted rather than concentrated. muddiness of Pauwelsii 'Compte de mptine' derivatives and the failure of any colour than pink to evidence itself when ssed with white tetraploids then could only e been a retarding factor. The massive werings of a cross could only occur in a mmercial nursery and as such these were tated to by commercial pressures.

There is little doubt however, that the ks and reds obtained from the Babylon geny, as seen for example in the Ann eens, if inter-crossed would ultimately d intense reds. The same applies to Vieux se 'Dell Park' progeny.

There was a massive flowering of tetra- d Swallows in the early nineteen sixties d from this the non fading green Swallow artreuse' emerged. McBean's Shirley ich made the tetraploid Shiraz cross with W.B., had the ability to produce greens d yellows. I selfed one of the Shiraz's and ained several good yellows. A crossing I de with Shiraz x Ann Green gave me a utiful green tetraploid with magnificent wers, fifteen on the spike and free flower- qualities but alas, column deformities. ce again however, such crosses as these ow so many indistinct colours, that the of development has been virtually pro- itive. Not only does the colour have to there but shape, spike habit and free wering properties also.

Dorama 'Fairfield' which is thought to be same as the other Dorama varietal clones und the world, has shown in triploid sses, that it can produce good greens and llows. It is reasonable to assume that when ssed with appropriate tetraploids, good lour will be gained. Its large flowers, good and upright raceme habit, are important features. It does however spoil a substantial percentage of its progeny, by passing on its tendency to turn flowers in against the raceme. It is appropriate to note at this point also, that clones which have flowered turned in on the raceme do not do this if the raceme is trained downwards. To some extent development from this clone has been delayed by general lack of awareness of its tetraploid status.

A tetraploid Irish Melody in America, was crossed with a Stanley Fouraker to make the Arcadian Melody cross. Some of these were rich creams. One of these, Arcadian Melody 'Harvest Moon', when crossed with good green and yellow diploids threw good yellows and greens.

With the arrival of the rich yellow Wallara 'Gold Nugget' and tetraploid conversions of good greens like Fanfare 'St. Francis', the process of gaining banks of colour intense tetraploid breeding stock will be accelerated greatly particularly when the hybridiser knows by existing seedling populations, which of the existing tetraploids actually produced good colour. The white Pearl Easter 'McBean's', for instance, was selfed and while it did not produce anything outstanding in shape, it did throw some nice greens with up to seventeen blooms well placed on the raceme. It is also known that Pearl Easter will reflect fine shape in its progeny if the other parent offers it. The Snow Sprites and Mary Anns and Pearl Balkis crosses showed this.

If the time element and breeding pressures are evaluated in conjunction with what has evidenced itself to date then it seems that these factors are the main ones behind the lack of colour intense tetraploids rather than the fact that the colours weren't there to develop.

The key to the spreading of the flowering times came with the tetraploid count of Early Bird 'Pacific' in the early nineteen fifties. When crossed with diploids the progeny were spoilt almost to the last clone with forward petals and small lips — Early Bird



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as just too dominant with its faults. For he same reason most of its tetraploid rogeny were spoiled but this was not the ase in the second generation crosses where ally outstanding clones free of these faults ut still with the early flowering time started o appear. In addition to flowering time arly Bird 'Pacific' offered a rich range of aluable characteristics such as clear white olour, freedom from hooding, a dropping f the lower sepals, wide petal segments, reedom from spotting, pliant flower stems and sistance to staining from strong light. etraploid perfection was now just a matter f time. Apart from carrying the *C. erythro-ylum* flowering time, indications are evident hat Early Bird 'Pacific' also carries *C.* raceyanum flowering time. This was observ-ble when some of the intercrosses of the anley Fourakers produced no progeny as arly as Early Bird itself but threw their for-ard run at *C. traceyanum* flowering time.

The other species flowering times is not easy to detect because of the wide over-p. However, *C. grandiflorum* indicates its resence in progeny coming from Pearl aster and the tetraploid Shirley, and Sep-mber and October flowering times are bservable in the tetraploid multitudes now isting wherein for example consistently ite Etta Barlows or Mazatlans can be ob-rved just as readily as their flush or flush eating counterparts.

In general the hybridiser will look for timate flower perfection by blending restonbirt descendants (for shape), Pauwel-n Compte de Hemptine descendants (for umber on raceme, flatness of bloom) earl Easter descendants (for size) nd Early Bird 'Pacific' descendants or spread in flowering time). While this ill embrace whites, pinks and reds the overage of yellows and greens will require e additional use of Dorama, Shirley, allara and Irish Melody descendants with e colchicine converted tetraploids shorten-g the process.

18 *Kangaroo Pt. Road, Sylvania* 2224.

EW ADDRESS O.S. OF N.W. TASMANIA

Mr. P. Jackson, secretary of the O.S. of Nor-estern Tasmania, announces that the new address f Society mail addressed to him is P.O. Box 332, urnie, Tasmania 7320. The Society meets on the st Wednesday of the month in the Methodist all, Burnie. Visitors and new members will be ade very welcome.

S.A. ORCHID CLUB

Winter Show

Phalaenopsis Schoene von Celle, a white of high merit, was Champion Orchid of the Show. It narrowly beat *Paphiopedilum* Betty Bracey 'Springtime', AM/RHS, The phallie belonged to Johnston Orchids and the slipper to Adelaide Orchids.

Mr. Russell Martin brought a collection of first flowered seedlings from Melbourne. One of these *Cymbidium* Angelica 'December Gold', a flat open yellow of good texture, won the cymbidium class. His *C.* Angelica 'No. 3', also a yellow and with a broad maroon spotted lip, won best seedling. The minicym winner was Mr. Rex Thompson's mericlone of *C.* Leodogran 'Cradlemount', AM/AOS, SC/CSA, of which a colour illustration of the original clone appears on the front cover of the March, 1967 "A.O.R.".

A promising minicym was *C.* Sarah Jean 'Debbie', a delicate green of nice shape but with only one spike. More will be seen and heard of this cross.

Mr. K. Staple's *Cymbidium* Lunagard 'Elanora', a winner in its division, showed what can be achieved when a cymbidium is allowed to grow into a specimen plant.

While paphiopedilums attracted plenty of attention one or two other plants were of considerable merit and interest, notably Mr. J. Provis' *Angraecum* Veitchii with its fine long-spurred waxy flowers, and Mr. M. Fullston's deep mauve red *Laelia gouldiana* with its twelve flowers.

ORCHID SOCIETY OF W.A.

Winter Show

This year the West Australian Orchid Winter Festival was held at the Carousel Shopping Centre for the first time. It proved to be the best Winter Show yet staged.

Winners of the main prizes were:

Champion Paphiopedilum. *P.* Welsh Rose 'Leslie', exhibited by Mr. Roy Brown.

Reserve Champion Paphiopedilum: *P.* Greenshank, exhibited by Mr. W. E. Edward.

Best Paph. Novice Section: *P.* Kismet, owned by Mrs. R. Ullrich.

Champion Cattleya: *Blc.* Wake Island x *Lc.* Bonanza, exhibited by Mr. and Mrs. H. Johnson.

An Island Display designed and presented by Mr. and Mrs. Ken Rex was judged worthy of the Australian Orchid Council Award.

All members worked well to create this fine show but special thanks are due to Mrs. Jean Long and Mrs. Faye Gale for their wonderful work on setting up night, also to Treasurer Mrs. K. Baylis, who spent most of the time the Show was open in attendance.

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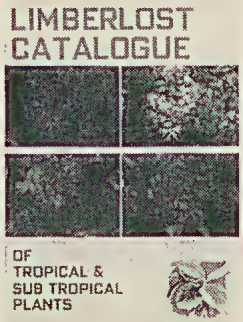
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My Experience in Growing W.A. Terrestrial Orchids

TIDOR BODROGAI

Many have the mistaken belief that W.A. terrestrial orchids are difficult to grow but providing you know their needs and understand their growing conditions in nature they can be grown in pots and flowered to perfection. Under a few important headings I will discuss my own experiences.

Watering

Study in the field has proved that even in winter when water lays on the ground in places, the ground where orchids grow is dry under the damp leafmould cover. Even the swamp orchids' ground is dry by the time the bulbs are dormant.

After the last flowers have finished I start to cut back watering because the new bulb has developed by then and if they get water for a longer period rot will set in.

Because it is hard to create perfect drainage in pots watering should be delayed as long as possible. Fortnightly watering can be started towards the end of February then weekly by the end of March, and beginning in April, twice a week, but still depending on the pots' needs.

If in doubt don't water, for I believe the biggest part of the success lies in the watering programme.

One reason for delaying watering is to help to avoid collar rot, which easily occurs if the vegetative period (from the time the leaf appears until the flower spike develops) is lengthened by early watering. I have found the flowering time cannot be speeded up.

The *Pterostylis* genus may be a little easier to grow but only because they can take more water in their dormant period, but they too do better if kept dry.

Compost

Only a few species need special compost, e.g. *Caleana nigrita* (now named *Paracaleana nigrita*) and all *Drakaea* seem to dislike any leafmould near their tubers. They prefer fine bush sand. I use fine leafmould to top the pot only.

Pterostylis barbata likes to have very coarse sand (gravelly) also top dressed with leafmould. Most of the other orchids do well in 50/50 sand and fine sieved leafmould mixed together.

Shading

My pots are kept under 50% — 65% shade, but only when nearing flowering stage I move them to a lighter position. All Thelymitra need more sunlight than this once they develop the flower spike.

Fertilizer

I have found to change the top dressing of leafmould each year with fresh leafmould is quite beneficial to the orchids, also on all pots I put dried kangaroo droppings and this is watered in with each watering (I have not tried any pots without this, so I cannot say for sure if this is helpful or not).

Collecting Tubers

As all native orchids are protected, written permission for collecting must be obtained from the owner of the property.

I always have a tray with a damp cloth on it to collect the tubers without soil, this is the only way to be sure you have the new tuber (most caladenias travel a long way from the flower, sometimes up to seven inches away). Cover the tubers as soon as possible with the damp cloth, this way there should be no setback to the plant. These can be planted in plain fine bush sand and washed in well with water to lock out all air bubbles from around the tuber. They can remain in this until all flowering has finished and the plant is dormant (usually end November), remember no watering after the flower has finished. By December they can be lifted and put into their permanent pots. Six inches to seven inches terra cotta pots are better than plastic for W.A. terrestrial orchids.

So many of us take our lovely native orchids for granted but unless we all do something to save these treasures our future generations will not have the pleasure of seeing them.

17 Charterhouse St., Eaton 6232

PERTH GROWERS VISIT BUNBURY

Thirty-nine Perth members of the Orchid Society of Western Australia made a joyous Spring pilgrimage to Bunbury where they were guests of the newly formed Bunbury Orchid Group. The Group is an official part of the O.S. of W.A.

The visitors made the 115 mile trip by train and the forward and return journeys were social events in themselves.

Members of Bunbury Group showered hospitality upon their visitors. After lunch a visit was made to Boulter's Heights, a famous beauty spot from which a magnificent vista of the town and coast can be seen behind a foreground of bushland and waterfall.

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STRICTLY FOR THE NOVICE

PHYLLIS A. MURN

Last issue I wrote about my cymbids, I also have quite a few meristems in spike for the first time and I hope to have the opportunity to tell you how I fared with them at a later date.

Moving on to other genera, I shall start with cattleya. My first was the seedling I won, in a raffle. This hung on the side of my cymbid house, Oh! It grew the second year I had it, it grew a nice new growth plus this odd-looking second leaf — how I tried to make it healthy the same as the other, even gave it the epsom salts treatment, exasperated, I asked one of the ladies in my society would she visit me and give me some advice. How she laughed when she saw my plant, after, she made certain I was quite serious and said, "My dear that's a flower sheaf, see, if you hold it in the light you will see the tiny buds, they are about halfway up now. I must say it is a rather small plant to be flowering, cattleya really do grow much better in a glasshouse, you know". Our backyard now boasts a small 9 ft. x 9 ft. superseded build-it-yourself glasshouse which my husband thoroughly enjoyed erecting. I had a spot of trouble getting him to paint the glass as he said it spoilt the appearance. The benches are corrugated fibro sheets, for no particular reason other than I saw it somewhere and copied it. There I was with a new glasshouse with only one plant in it but not for long, dear me no! By having sausages one night a week and mince another I averaged three seedlings a fortnight, however, needless to say, this little caper did not last long. When the lady from whom I had sought help earlier, heard I had acquired my glasshouse, she made me a donation of one well-grown Cattleya Meg Darrell and a vanda. How I love my Meg Darrell, it flowers twice a year and it has won the Novice Cattleya Section each time I have shown it. Never be afraid to ask for help and laugh at your own errors because when you are a novice there will be many. As a matter of interest I have never been able to flower the *Vanda* Nellie Morley, it looks healthy too. I usually buy small Cattleya seedlings as this way I get two for the price of one, plus the fact it give me great pleasure to watch them grow. I must admit to buying one or two meristems also. My one utter failure in this field is epicattleya. I bought three different crossings and killed them off smartly, I am fairly sure because of too much water. I have been trying to purchase a piece of an established plant, perhaps I may have more luck with that. Oh well, you can't win all the time.

Culture — Firstly, I prefer terra-cotta Azalea pots, but I always enlarge the drainage hole, my medium is two parts fir bark, one part charcoal, plus a little styrene. Also, a little sandstone will not do any harm. I use charcoal and broken pieces of terra-cotta to crock the pot. When repotting or even potting on I always stake the plant in well, as I do not seem to be able to firm my plants in as well as the men do and a wobbly plant just won't grow. I do not fertilise cattleya as much as I do the cymbids, about every 10 to 14 days, and again I do not make my solution full strength as I feel sure more damage can be done to all orchids by over-fertilising, in fact, overdoing anything by we novices. Learn to understand your plants fully. First, then get a bit more daring. In summer, I now water approximately three times a week, I damp down the floor more often, the floor is black plastic covered with river stones, I must say it stays neat and clean. My Maiden Hair ferns grow in pots under the benches, while these grow merrily I feel all is well in my little glasshouse.

16 Darrell Road, Eastwood 2212

ORCHID SOCIETY OF N.S.W.

Winter Show

For the third year in succession N.S.W. held their Winter Show in the Westfield Plaza, Hornsby. Each Society was free to select its own theme in the Display Class for Affiliates and these varied from oriental style to the homely "Man and his Orchids".

The Grand Champion Paphiopedilum was *P.* Fidelity 'Noel' owned by Mr. W. Hughes. The Champion was green with a white flare on the dorsal. It seemed a little weak on shape. Mr. Hughes also owned the Reserve Champion, *P.* Madiana 'Sable'.

Best Society Display was won by Five Dock (R.S.L.) O.S., with Eastern Suburbs and Sutherland second and third.

The Show was very successful for Mr. Hughes because he also won Reserve Champion Other Orchid with *Phalaenopsis* Pin Up Girl 'Bonsalle' x *P.* Show Girl 'Galpine'. Champion Other Orchid was *Dendrobium* Susie Wong from Wayside Nursery.

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Townsville O.S. Honours Members



Five members of the Townsville Orchid Society have been made Life Members. Pictured from left front are, Mr. Jim Kirke, Mrs. I. Nott, Mr. Alf Snaples, Mrs. A. Davidson, and Mr. Ron Merritt. At back are Mr. Bill Griffiths and President Mr. Neville Ludwig, who presented the Life Membership badges.

TROPICAL QUEENSLAND ORCHID COUNCIL

NINTH ANNUAL CONFERENCE

"CYCNOCHES"

Bowen, 127 miles south of Townsville, was the venue for the Ninth Annual Conference of the Tropical Queensland Orchid Council, held over the Queen's Birthday weekend.

The June quarterly meeting was the first part of the programme and this was held in the Bowen Memorial Hall. The president, Mr. Frank Tooth, opened the meeting and welcomed the patron, Mr. Frank Slattery, of Sydney, and the delegates from Innisfail, Bowen, Mackay, Mount Isa and two Townsville societies.

Mrs. Slattery was also present and a large number of observers, including some from Bundaberg and Gladstone, as well as members of participating and interested clubs.

At 5 p.m. the judges met at the Church of England hall and proceeded to make awards in the various sections. Mrs. Slattery judged the floral art, and Mrs. M. Mercer of Townsville, judged the foliage section. A panel of T.Q.O.C. judges, which included Mr. Slattery, viewed the orchid section, and the following was their findings:

Orchids — Ascocenda: Neville Ludwig 1, Neil McMahon 2; Vanda: Eileen Heron; Cattleya (Bifoliate): Mick England; Cattleya (Labia): Tony Kapcelovich 1, Neil McMahon 2; Phalaenopsis: Herb Hall-Scott 1 and 2; Australian Native Species: Keith Carter; Dendrobium: Keith Carter; Epidendrum: Val Trealor; Oncidium: Bill Golding; champion and winner of the Frank Slattery trophy was Neville Ludwig with his ascocenda.

Foliage — Softwood: Sheila Gallagher; Hardwood: Eileen Heron; Maiden Hair Fern: Elva Treacy; champion: Elva Treacy.

Floral Art — Let's Go Modern with Roses: Beryl Golding; Psychedelic: Beryl Golding; Paired complementary: Bev Bullimor; Elegance with Orchids: Beryl Golding. Champion: Beryl Golding.

The conference dinner commenced at 7 p.m. and behind the main table was staged a display depicting the theme: "The Climate Capital of Australia". During the dinner the shire chairman, Councillor Yardley, officially opened the conference.

After the delightful meal, the participants were treated to a movie on the reconstruction of the Don River, a massive project undertaken to try to alleviate the possibility of a recurrence of the damage caused by floodwater after cyclone Althea.

Mr. Jack Wallis, of Innisfail, presented a paper on virus in orchids and had a box of affected plants to show the damage caused by this disease.

The next event of the evening was a slide programme by Mr. Maurie Watson of Townsville. The tournament of roses, an annual event held in Pasadena, California, was the subject he chose.

On Sunday morning, a large number of people assembled at the post office and at 9 o'clock moved off to morning tea at the home of Mrs. Dunne. From there the motorcade went to the farm of Mr. and Mrs. Wright, where a demonstration of tomato growing, grading and packing was seen.

At Mr. and Mrs. Heron's home much interest was shown in Mr. Heron's hobbies as well as his orchids. A drive to Queen's Beach preceded lunch which was picnic-style at Gray's Bay. After lunch three bush houses were visited, these belonging to Mrs. McMahon, Arthur Anderson and Mrs. Lillian Ashman, all of whom live at Delta. At Mrs. Ashman's, everyone admired her anthuriums and some members of the group were treated to a demonstration of a compost shredder.

A barbecue tea was held at the home of Mr. and Mrs. Alf Gallagher, this was followed by more slides by Maurie Watson and some from a visitor from Gladstone.

On Monday, a group travelled to Mr. Ken McPherson's at Vine Creek, Proserpine. The methods used by Ken demonstrated the ease with which orchids can be grown.

Sheila Gallagher and her band of workers and the Bowen Orchid and Foliage Society really gave the visitors a delightful weekend, and everyone will be looking forward to the next conference.

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FIVEDOCK ORCHID SOCIETY

To have late late Spring Show 10th to 12th October

Last year the Fivedock Orchid Society of N.S.W. had the courage to experiment with the holding of a Show very late in the Spring. It was an outstanding success. As well as the top quality late cymbidiums the Show was notable for softcane dendrobiums flowering at their peak. Many of the wide range of other genera have rarely been seen outside private collections.

Benefiting from last year's experience the Fivedock Committee are determined to make this year's Show the talk of Sydney orchid circles. This year there are many more classes, catering particularly for softcane dendrobiums, but also with some appealing special classes such as "Best novelty or cocktail type Cattleya".

Champion Cymbidium is to receive $40, and Champion Dendrobium $15. Class 6 is for "Three Dendrobiums — district varieties. Judged for form and colour". There is a class for "Best Dendrobium Specimen" and another for "Best species orchid".

The Show will be held in the Drummoyne Civic Centre which is on the corner of Lyons Road and Marlborough Street, Drummoyne. Open Thursday 10th, 2 to 10 p.m., Friday 10 a.m. to 10 p.m., and Saturday, 12th, 10 a.m. to 8 p.m. Exhibitors set up from 3.30 p.m. Wednesday. Admission 30c. Pensioners and accompanied children free. The Civic Centre is only a short walk from the Victoria Road bus route.

NEW ZEALAND ORCHID SOCIETY (INC.)

Spring Show

The New Zealand O.S. will hold its Spring Show in the Mt. Albert War Memorial Hall, New North Road, Auckland, beginning Thursday, 19th through to Saturday, 21st September. Show will be open from 10 a.m. to 9 p.m. on the first two days, and 10 a.m. to 6 p.m. on Saturday.

Information on the Show and the Society can be obtained from the Honorary Secretary, Mr. G. E. Wight, of 88 Balmoral Road, Mt. Eden, Auckland 3, N.Z. The Society meets on the third Wednesday in each month (except December and January) at the Mt. Albert Memorial Hall.

LAUNCESTON SHOW

Launceston O.S. will hold their Annual Spring Show on Friday, 19th and Saturday, 20th September, in conjunction with the Launceston Horticultural Society. It will be held in Launceston's Albert Hall. Acting Secretary is Mr. L. H. Westerway, 72 Forest Road, Riverside, Launceston. Phone 27-3159.

COELOGYNE CRISTATA

A large specimen of this beautiful genus covered in white blooms is a spectacle not easily forgotten. It is such an easy and rewarding plant to grow that anyone can grow it and flower it under normal bush-house conditions.

I have grown them in slatted baskets, slotted pots, plastic pots. They will grow suspended from the bush-house roof, sitting on the floor, or anywhere in between, as long as they get about 75 per cent light.

As a mixture, I grow them in a "bit of everything" — equal parts of peat moss, with charcoal, bark, tree fern, leaf-mould, and wood shavings. I have grown them in numerous mixtures, and I think they will grow in anything that is well drained.

I water my plants twice a week in Summer, once a week in Winter, and advise not to water overhead when in flower, as the flowers spot easily. Plants will stand feeding once a fortnight during Spring and Summer with Aquasol and Formula 20. Withhold feed once the new growth is complete.

Neville Wood in *Illawarra O.S. Newsletter.*

DEAR NOVICE

Have you ever stopped to think about Sphagnum Moss? It used to have many uses, when dried, the grand old Indian ladies used it in the bottom of their baby's Papoose to take the place of what we call napkins. Sphagnum Moss when green, has an uncanny way of coaching young roots to grow and that brings me to a hint, that is common knowledge without older growers that perhaps you have not tried yet, it is simply this, when breaking up Cattleyas Dens, etc., you will sometimes finish up with a poor hapless plant, with not a single root to bless itself with, so spread out a mat of green Sphagnum Moss (dry moss out of the bag you bought from the Nursery will do) but green moss is best. Make your mat about 9" square about 1" deep, now place the unhappy plant on it and wrap it up with the moss to make a ball about the size of a cricket ball, enveloping the bottom half of the plant, make it damp and then place it all in a clear plastic bag, tie off the neck of the bag to exclude air, then hang it in a warm spot in the Glasshouse or fernery and forget it for about 4 to 5 weeks or longer. Sometimes a couple of months. Eventually on inspection, you will find it has grown small, perhaps ½" long roots. I usually wrap a small amount of the moss around them, just sufficient to protect the roots, then fill the pot with your usual potting mix and finish off in the usual way. The moss will die and rot away leaving the plant to go on without it, so the ancient Sphagnum Moss with the modern plasic bag, makes a good combination.

Steve Seymour in *Newcastle O.S. Bulletin.*

TAMWORTH SPRING SHOW

The Tamworth Orchid Society is to hold its Spring show in the Myer Ltd. store, Tamworth, on Friday, 20th September, 9 a.m. to 5.20 p.m., and on Saturday, 21st from 9 to 11.30 a.m. The Society meets on the third Thursday in the month at members' homes. Visitors and new members are very welcome. Secretary is Mr. Max Tom, 6 Griffen Avenue, Tamworth. Private phone: 66-4297; Business: 66-1033.

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FOURTH AUSTRALIAN ORCHID CONFERENCE

Meet the orchid growers of Sydney

RONALD KERR

A city which has eighteen very active orchid societies has a lot going for it. It also supports many famous orchid nurseries, a huge cymbidium cut flower industry, hundreds of growers with fine mixed collections, and many specialised growers.

The nurseries date back to the post war cymbidium boom period during which plants changed hands at fantastic prices. This boom was generated by the importation of thousands of quality cymbidium seedlings during the early days of the war, when English growers were forced by fuel rationing to clear their glasshouses.

The late Mr. Leo Giles founded his Wondabah establishment at this time and was the first to attempt hybridising on any scale. Earlier, the late Cec Cambourne and A. B. Porter, now Chairman of the Conference Programme Committee, had successfully raised seedlings by asymbiotic techniques as early as 1943. They were probably the first to do so in Australia.

These pioneers made a very successful cross between a fine *C.* Lucy of A. B. Porter's and *C.* Wylan, which they registered as *C.* Sirius in 1958.

Mr. Giles repeated this cross at a time when the export market for cymbidium blooms was being pioneered, and most *C.* Sirius proved excellent export flowers.

It also proved an excellent parent producing such progeny as *C.* Weina when crossed with *C.* Alnwick Castle, *C.* Warella from a cross with *C.* Lustrous, *C.* Wyanga from *C.* Ramboda, and *C.* Liena from a cross with *C.* Sensation. The resulting clones were mainly pastel greens and yellows and many were early flowering.

To meet the interest in strong colours Mr. Giles bred to this end, and in the late fifties his cross between *C.* Spartan Queen and *C.* Fascination resulted in the deepest and best reds to date. This cross was registered in 1961 as *C.* Sensation.

Then followed a long string of hybrids bred for colour, such as *C.* Warrah (Sussex x Spartan Queen) *C.* Warrimo (Robin Redbreast x Spartan Queen) *C.* Wollar (Balkis x Remus) and many others, culminating in the outstanding *C.* Wallara (Balkis x Auriga) registered in 1964. Some of the best yellows in the world emerged from this cross, superb for shape, texture, florescence, and purity of colour. Many judges consider *C.* Wallara 'Gold Nugget' and *C.* Wallara 'Golden Ball' the finest yellows ever bred.

Unfortunately Mr. Giles is no longer with us to greet and counsel at his Wondabah estate in Carlingford, one of Sydney's northwestern suburbs. But his work lives on in an establishment ably run by his two sons, one of whom, Gordon Giles, has long been known as a fine grower in his own right.

At the Fourth Australian Orchid Conference you can visit Wondabah on one of the tours, or call at your convenience.

For many years the Australian branch of Dos Pueblos was a name synonymous with good orchids. This nursery was responsible for a great influx of quality species and new hybrids in the late fifties and early sixties. The increasing value of its land — which was zoned industrial — caused curtailment some few years ago but its influence and spirit linger on. York Meredith, its chief, still grows cymbidiums for the flower export market, and a range of cattleyas, at his Willandra nursery at the beach suburb of Dee Why, but he has diversified into other horticultural lines.

Although not on one of the official tours you may care to go there. York will give you a warm welcome and you will see many fine foliage plants as well as orchids.

The northern beach suburbs are famous for surf and scenery. At Dee Why is the now famous Stony Range, a three hectare plot of natural bush embellished by the addition of wildflower species — mainly from the surrounding area — which would otherwise have perished before the spread of habitation. Stony Range is the dedicated work of a conservation group led by Mr. Alec Blomberry, and its orchids are looked after by a group of the Australasian Native Orchid Society.

Your visit to Stony Range in September will be a memorable experience for then its many native orchids, include great clumps of Dendrobium speciosum covered in thousands of white, cream, or yellow flowers.

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North of Dee Why is Tom Henry's nursery at Avalon Beach, famous for fine cymbidiums and paphiopedilums. Tom was Dos Pueblos' manager for many years and really knows his orchids.

Go along too for the superb coastal views on the way and the glimpses you'll get of Broken Bay and, if you go far enough, Palm Beach.

At Avalon, too, is Olivine May Orchids, run by Frank and Olivine McCarry. The McCarry's have specialised in hybridising cymbidiums and in supplying the overseas flower market. While they have recently reduced their scale of operations they still have a nice range of top-notch plants.

Back of Avalon is Terrey Hills where the large Australian Cymbidium Company, directed by George Habel, caters for the export and seedling market. Cymbidium growers will relish a visit here.

From Terrey Hills it is only a short run to the Sunnybank nursery at Belrose which has largely replaced Dos Pueblos as a source of rare and unusual species. Cymbidiums are also grown for the flower market. Sunnybank was established by Ron Lin who is also well known as a world Conference tripper. Early on he served on the Fourth Australian Orchid Conference Hospitality Committee, which also includes those highly experienced stirrers of good fellowship Bill Smoothey, and Eve and Ed Redix, but had to step down due to pressure of business.

It is whispered that Ron Lin is opening his private collection to inspection during one of the coach tours. At his home in Chatswood Ron houses the *crême de la crême* of his orchids — innumerable genera all growing in the one massive house, and all growing well because each is positioned in a compatible micro-climate.

From Sunnybank you can journey back to town, or divert through Pymble and the North Shore suburbs where the beautiful gardens will be ablaze with azaleas, magnolias, wisteria, and glowing prunus.

There are many growers of fine orchids on the North Shore and the North Shore Orchid Society has well over 200 members. Among them is Phil Spence of French's Forest who has the best collection of New Guinea orchids in Australia. Then there's Jim Cummings of Willoughby whose large yard is one mass of orchids and cacti, all grown on love and tender care. There is always a show at Jim's place.

Reg Trenerry lives near Jim but in a different suburb, Northbridge. Reg specialises in growing orchids cold, and achieves outstanding success. If you have cool growing problems he is the man to see. In his huge paphiopedilum collection there are few of the world top-notchers he does not own. Nowadays Reg has retired and does a bit of trading to keep his collection within bounds.

A great sideways leap westward will take you to Beecroft Road, past Epping, to a neat arrangement of orchid houses on a corner block.

Here Bob Deane holds sway over an enormous range of orchid genera from botanicals to spectacular unusuals. Over the years Bob has imported seed from everywhere and the results of much patient culture can be seen on his benches. In September you can also be sure of seeing a good display of many native species and their hybrids.

Bob has bought a two hectare block at Dural amongst Sydney's north-western hills and is steadily covering this area with orchid houses.

From Dural you can push a little further along the old main northern road, through pleasant open fields, to Norm Loader's huge orchid nursery. Norm and his charming wife started as amateur growers over twenty years ago and were soon in the cymbidium flower export business. Within a few years they moved to their fourteen hectare property at Dural and developed it into the largest orchid establishment in Australia.

Norm Loader is undoubted king of the exporters but he and his wife are as interested in the smallest botanicals as they are in their thousands of cymbidiums. They know intimately the many native terrestrial and epiphytic orchids which grow naturally on their property. While working at the Royal Herbarium Mrs. Loader was assistant to the famous orchidist, the late Rev. H. M. R. Rupp.

The meticulous Reverend Rupp was a founding Vice-President of the Orchid Society of N.S.W. He is well known for his book "Orchids of New South Wales" of which second edition copies may be obtained from the Government Printer at only $5, plus postage.

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Small but growing cymbidium flower export nurseries abound near Dural, including an interesting one run by George Jagger and his wife Pat, on the Annangrove Road. Pat is one of the two women judges on the N.S.W. judging panel. At Kenthurst nearby, Ray Deane has an enviable reputation for fine cymbidiums.

A great leap southwards over the Harbour Bridge, with a view of the Opera House as you go, takes you to the wonderful little world of Frank Slattery.

Frank is an international figure in the orchid world. He is also a very nice guy. He and his wife Jean work hard for orchids. Jean has been secretary of St. George Orchid Society for many years and is an expert on floral art. Frank has served two terms of three years as President of the Orchid Society of N.S.W. The last term included the demanding Sixth World Orchid Conference period.

Frank Slattery's nursery will be included in one of the tours, but if you miss the tour don't miss going out for a look.

Further south at Lugarno Bert Schwartz holds dominion over thousands of cymbidiums, phalaenopsis, paphiopedilums, plus a few of other genera. Bert supplies the export and local flower markets to a degree which keeps him and his charming family overworked —in the export season anyway. He also sells quality seedlings.

Bert is a great worker for orchids and heads the Working Committee for this Fourth Australian Orchid Conference.

Lugarno edges the George's River which leads you eventually to Sutherland and Cronulla. At the latter Athol Bell holds sway.

Athol is well known as the Registrar-General for the A.O.C. He has perfected paphiopedilum seed raising and his batches of seedlings from the world's top parents are reaching the flowering stage. Athol is not a commercial grower but you could be lucky enough to get him to sell a seedling or two.

Living nearby is another keen amateur, George Colthrup who grows natives and exotic genera extremely well. George and his wife keep a neat establishment and are very knowledgeable on orchids, particularly the odontoglossum complex.

At Sutherland Mr. and Mrs. Craig have a large cymbidium flower export nursery. They have created many fine hybrids of which the beautiful yellow *C.* Valya Craig 'Sutherland' is probably the best known.

Past Sutherland a road skirts Botany Bay to take you to Kurnell, celebrated as the spot on which Captain Cook landed over 200 years ago.

Alvin Bryant, known for his pioneering of new breeding trends, has his nursery here. Alvin grows flowers for export as well as breeding for the show bench. Alvin speaks for himself in this and the last issue.

Alike for historical and orchid interest you will find that a trip to Kurnell is well worthwhile.

Species and mixed genera growers should cross back over the Captain Cook bridge for calls on Jack Janesse, famed as a species grower, and Bert and Beth Cardwell, very successful growers of many genera. They are not commercial growers.

Jack has made three trips to New Guinea and has successfully adapted many orchid treasures from that clime to Sydney conditions. If you grow species Jack Janesse will be pleased to talk orchids.

Beth and Bert are both judges of the Orchid Society of N.S.W. They grow a very mixed range of spectacular genera in a hot house and two cold houses, as well as playing a very active part in two orchid societies.

In a far out western suburb, Cecil Park, Mr. and Mrs. Gulbis have a superb export flower nursery. They have bred much fine stock and mericloned good export type cymbidiums on a big scale. Both love orchids and grow select clones of many genera for their own and other people's enjoyment. They have a wonderful record as workers for the Parramatta Orchid Society and as supporters of the Orchid Society of N.S.W.

There are many other fine growers and a number of them will be making their growing houses open for inspection before, during, and after the Conference.

Some growers will be included in local tours. Lists of others eager to meet you and show you their plants will be supplied when you have registered. Specialist growers will be listed together with their addresses, phone numbers, and directions how to travel to them by the most interesting route. If possible groups with a particular interest will be organised to travel together.

You would never get opportunities like this on a private visit.

Register for details of the Fourth Australian Orchid Conference now with the Conference Secretary: Mrs. Maude Tyler, 29 St. George's Crescent, Drummoyne, N.S.W., Australia 2047.

SUNSHINE ORCHIDS

JUST A SELECTION FROM OUR CURRENT CATALOGUE

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SS192	Angraecum Veitchii: Large cream flowers. long lasting. 3" square pots	$2.50
WS18/71	(Lc. Le Langford 'Linda Vista' x Lc. Pacific Sun) x Lc. Daniris 'Latuilerie: Bright gold with red or purple lips 3" square pots	$2.50
SS159	Phal. Daryl Beard HCC/AOS x Fuscata: Expect quality yellows spotted red. 3" square pots	$2.50
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	V. Bill Sutton 'Alma' x Asc. Meda Arnold
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	V. Kuniko Sugihara 'City' x Asc. Curvifolium
	Asc. Yip Sum Wah
	Asc. James Furamizo x V. Sanderianna
	Asc. Bonanza 'Dream City' x Asc. Yip Sum Wah
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	C. Lynn Spencer. White
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	C. Little Angel x C. General Patton 'Victory'. White
Novelty Phalaenopsis	P. Celebration x P. Mt. Kaala 'Kodama'. Splashed brown
	P. Celebration x P. Keith Shaffer. Brown bars, white
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	P. Luddemannia 'Hieroglyphica' x P. Spica. Yellow, orange
Vandas	V. Kalamia 'Maui' x V. Bill Sutton 'Alma'. Biscuit
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	V. Kilohana. 3" pot size $2.50
	V. Beebee Sumner x V. Sanderianna. 3" pot size $2.50
Phalaenopsis	P. Anna Tham x P. Stuartianna. Pink
	P. Mr. Kaala 'Kodama' x P. Elinor Shaffer. White
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	P. Best Girl x P. Stuartianna. Pink

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Due to illness nursery will be closed to visitors till the end of the year. Phone and mail orders will be despatched as usual — A self addressed stamped envelope will bring you our latest listings.

AN IMPORTANT ORCHID BOOK

Rosa Fiveash's Australian Orchids

Rigby Limited have done a service to our cultural present and future by bringing alive a fascinating segment of Australia's orchid past.

Rosa Catherine Fiveash died in 1938 after a long and fruitful career as a botanical artist. Since then her name has had passing significance only to those students who have delved deeply into J. E. Brown's *Forest Flora of South Australia,* J. M. Black's *Flora of South Australia,* and Dr. R. J. Rogers *South Australian Orchids.*

Seventeen of the Fiveash paintings were used in the late Dr. Roger's book, only two in rather poor colour, the rest in black and white. These illustrations were reduced in size and give little indication of the high standard of the artist's work.

Since her death the numerous unpublished Fiveash paintings have remained in the State Library of South Australia, and in the South Australian Museum, accessible only to students. This can only be compared to keeping the crown jewels in a dungeon viewable only by guards. Fortunately, the Director of the Adelaide Botanic Garden, Mr. Noel Lothian, and the enterprise of Rigbys have combined to unlock this cultural heritage, or at least the portion possessed by the South Australian Museum.

The result is a book with, in most cases, faithful colour reproduction throughout its ninety-nine plates, covering twenty-three genera and 139 species.

Mr. Lothian has written an introduction summarising the place of orchids in the plant kingdom. He also describes each orchid. The text is lucid and easy for a non-botanist to follow.

Plates used by Black and Rogers have been avoided where possible, but a couple of Roger's illustrations can be recognised as part of composite plates.

By aesthetic standards the book is superb, and anyone should be able to identify South Australian orchids from its plates. Some botanists could quibble over a few of the morphological details.

There is one nomenclatural error of historical interest, namely the use of *Dendrobium tetragona* instead of *D. tetragonum.* Rosa Fiveash must have known it as *Callistra tetragona* following the attempt of the botanist Otto Kuntze to change the genus name from *Dendrobium* to *Callistra.* The change was not substantiated. The adjective *tetragona* is the feminine form whereas Dendrobium in Latin is neuter gender and the adfix *um* applies. The *D. tetragonum* illustrated is an outstanding one and all growers would welcome it to their collections.

Although all the South Australian terrestrials are charmingly and artistically presented some of the epiphytic orchids are not so successful. This is not the fault of the artist but of the material available. Obviously she would have worked from glasshouse specimens for these and some of these show the effects of poor culture, notably *Dendrobium bigibbum* and *D. gracilicaule* var. *howeanum.* (The species name is spelt *gracicaule* in the text). The delightful *Bulbophyllum bracteatum* is shown only in bud.

But mentioning such minor discrepancies is like complaining about the moles on a beautiful woman.

It is a proud book. It partly fills a gap in our orchid history, and it does a lot for South Australia whose orchids predominate. Mr. Lothian and Rigby have done a fine job to rescue such beautiful material from oblivion.

One suspects that there is more of the same lying where it cannot be appreciated. Would not Dr. Rodger's extant material be worth combing through and editing in conjunction with further Rosa Fiveash paintings? Maybe the Orchid Society of South Australia could consider sponsoring such research.

Meanwhile here is a fine book for your coffee table, an ideal gift for a friend, and a must for the orchid society library.

Rosa Fiveash's Australian Orchids, with text by Noel Lothian. Published by Rigby Limited of 30 North Terrace, Kent Town, S.A. Recommended price $19.50.

NEW SECRETARY FOR SHOALHAVEN O.S.

This very active Society on the N.S.W. south coast is now in its nineteenth year. At the last A.G.M. Mrs. E. Crawford became honorary secretary, succeeding Mrs. H. Watts whose unremitting efforts over many years contributed vastly to the success of the Society. The new secretary's address is 113 Jerry Bailey Road, Shoalhaven Heads 2535. The Society meets on the first Monday of the month at St. Andrew's Presbyterian Hall, Kinghorn Street, Nowra. Visitors and new members are always welcome.

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Laurie Deane and Ron Kerr

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NEW EDITOR

Mr. Brian Williams has been appointed the new editor of the English *Orchid Review* in succession to Mr. David Sander. Greetings to Mr. Williams and may the *Review* prosper under his direction. Best wishes too for Mr. Sander on his retirement to the leisurely pleasures of just growing orchids for the sheer fun of it.

HARD FACT FOR ODONT FANS

Mr. Keith Andrew in his *Odontoglossum* Notes published in *Orchid Review,* September, 1973, page 256, makes a point of great value to the increasing legion of Australian odontoglossum growers. He distinguishes between the cultural needs of the soft bulb species from northern South America and the hard bulb ones of Central America and Mexico. The soft bulb *O. crispum, O. pescatorei, O. wallisi, O. luteo-purpureum, O. lindleyanum,* etc. and their hybrids require even growing conditions year round. However, the hard bulb types like *O. citrosmum, O. grande, O. rossii, O. pulchellum,* require a very definite rest period in order to flower. Mr. Andrew makes a very good generalisation when he states "the harder the bulb the more decided the rest. Four to five months' period is often necessary".

DATA ON "ORCHIDATA"

If you haven't heard of *Orchidata* chances are you'll be hearing a lot more from now on. *Orchidata* is the official publication of the Greater New York Orchid Society, and is published six times a year. It started off as a duplicated bulletin and with brilliant editorship by Sarah Jesup and substantial contributors such as Carl Withner, Don Richardson and Goodale Moir it rapidly achieved fame in the orchid world. With status format improved, and when famed photographer Charles Marden Fitch took over as Editor over two years ago the standard of illustrations became notably high. This was achieved by producing the entire journal by the offset process. After profoundly influencing the publication Mr. Fitch has stepped down and his place has been taken by Norman Black. Mr. Black's first issue (Vol. XIII, No. 1) is a winner. Typography is improved by the use of justified columns (even right hand margins) and art paper is used throughout. There are many illustrations in black and white. Any seer would predict colour for the near future.

Orchidata is a first rate orchid journal any Society librarian can recommend to his Committee for subscription. Associate Membership covers the journal and costs $US5 per year. Send your money to the G.N.Y.O.S. Treasurer, 75 Revonah Avenue, Stamford, Connecticut, 06905, U.S.A.

AUSTRALIAN ORCHIDS

Volume 4, No. 5 of *Contributions from the N.S.W. National Herbarium* is important to all serious native growers and botanists, because of a paper by Mr. D. F. Blaxell who is orchid specialist at the Herbarium.

Titled *"Arthrochilus* F. Muell and related genera (Orchidaceae) in Australia" the summary states that "The status of some Australasian orchid genera is reviewed. A new species (*A. byrnesii*) and a segregate genus from Caleana R. Br. (*Paracaleana*) are described. Keys to the genera and species are included. The distribution of all species is mapped and plates of representatives of all genera are included."

The paper re-instates the genus *Arthrochilus* F. Muell. and makes the necessary new combinations which result. It describes a new species of *Arthrochilus* from the Northern Territory; unites two species of Caleana at present treated as distinct; and erects a new genus for some species previously included in *Caleana* R.Br. with the necessary new combinations for these.

For further information contact Mr. Blaxell at the National Herbarium, Sydney, N.S.W.

CUMBERLAND MAKES CHANGES

Cumberland Orchid Circle. New Venue and Meeting Night: Presbyterian Church Hall, 7 Castle Hill Road, West Pennant Hills, N.S.W. (Gregory's Map 68 B9) — First Wednesday in the month at 8 p.m. President, Mr. J. Hingston. Vice-President, Mr. D. Jones. Hon. Secretary, Mrs. J. Jones, Tel.: 84-3061. Treasurer, Mr. C. Smith. Correspondence to 121 Cardinal Avenue, West Pennant Hills 2120.

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Readers have written in requesting back issues detailed hereunder to complete their sets. Anyone able to be of assistance are asked to communicate with the Publishers at:—

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Some of these requests have come from overseas viz. U.S.A., France, West Indies, etc., and other readers are willing to swap old copies to obtain missing issues. PLEASE ADVISE OF ANY ISSUES YOU HAVE AND PRICE YOU WANT FOR THEM.

BASKET CULTURE AIDS pH CONTROL

(With a great deal of thanks to Clarence S. Lindsten. American Orchid Society Bulletin, January, 1973)

Baskets are suitable for so many genera but rather than list the majority of epiphytes, suffice to say that in the past so many growers have confined the roots of their plants to pots (which is entirely against the nature of all epiphytes) that man-made problems arose.

Notably these problems included the artificial control of pH and the avoidance of concentrated salts resulting in root tip burn.

The acceptance of both wooden slatted and wire baskets led to a better culture understanding, however, the slat width and the large mesh wire structure necessitated a lining of paperbark or similar medium; latterly, fibreglass fly mesh. These linings create to a lesser extent the same problems with pH and salt burn-off as develop in closed pots.

The development of polypropylene baskets with a moulded suitable fine mesh, lessened the amount of work involved potting each plant and has proved an investment, coupled with each plant purchased or planted out from stock in this manner.

Orchids grown under our normal tender care have not got it made as far as water is concerned. Most of our orchids require a pH between 5.8 and 6 maximum. When we confine their roots to pots we treat them to water supplies which contain toxic salts in varying quantities depending on geographical location.

Taking 7 as neutral, tests have found Sydney, New South Wales tap water to vary from 6.8 to 7. For those to whom pH is a new term, simplified, it is a chemical term denoting the measurement of acidity or alkalinity of water or soil; acidity registering below 7 alkalinity scaling above 7. Therefore, orchids desire a pH reading of 5.8 having a marked tendency towards acidity.

The reason that rain water is acid is that carbon dioxide molecules combine with the neutral moisture from the clouds and form carbonic acid. While the addition of citric or phosphoric acid could be used to adjust the pH factor, our average grower can greatly reduce this ever present problem by converting to basket culture wherever possible.

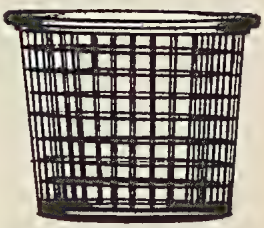
Basket grown epiphytes, coupled with a slightly finer potting medium than that used in fully enclosed pots develop a flushing system which with each watering leaches out the salts that normally build up in the compost. Once the salts crystallise and grow with each watering they are very difficult to remove, hence the end result of root burn-off as found in normal pot culture, due to salt toxicity.

Polypropylene baskets last much longer than wood and have the added advantage over wire of neither rusting nor transfering galvanic poisoning from galvanising processes. They are highly suitable, in addition, to tray culture on gravel or charcoal beds in a complete humidity atmosphere. When hung, on the other hand, they reduce insect life development within the compost and ant nest infestation, increasing bench space at the same time for other genera.

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AUSTRALIAN ORCHID REVIEW

NOTICE

Back issues available and required

(SEE PAGE 142)

The Publishers only have available some copies of old issues from 1956 onwards and one reader, in order to complete a set, requires copies as far back as Vol. 3 No. 3 (September, 1938), and Vol. 11 No. 2 (June, 1946). Any readers able to assist with back issues or interested in obtaining such copies are requested to write to: **Australian Orchid Review, P.O. Box M60, Sydney Mail Exchange, N.S.W., Australia 2012, or Phone 698-1447 Sydney (02).**

AUSTRALIAN ORCHID REVIEW

NOTICE

Subscribers are advised that renewal accounts for subscriptions are sent out immediately after each subscription has expired. In addition should the account not be paid then unless notice of cancellation is received, a reminder account is sent out prior to the following issue being posted.

Readers are reminded of the benefit of direct subscription thereby gaining the advantage of a quicker more reliable service which is not obtainable from agencies.

Secretaries of affiliated societies are advised that all subscriptions will be renewed direct by the publisher thus relieving them of this burden in the future. Needless to say the practice of allowing commission on bulk subscriptions has not been continued by the new publisher.

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JULY FLOWERING —

WHITES: Naples White Xmas, Naples Goleta, Naples No. 66, Naples Los Angeles.
YELLOWS: Naples Fullmoon, Naples Conistan, Naples No. 94, Naples Concolor.
CREAMS: Naples Sutherland, Naples Del Mar, Naples Monterey Bay.
PINKS: Rosemary Humphries July, Kurun Vivienne, Warrinya Warriewood.

AUGUST FLOWERING —

PINKS: Warrinya Parisienne, Lillian Stewart Olivine May, Wollar Wondabah.
YELLOWS: Bodmin Moor Pacific, Jean Celeste Meta.
GREENS: Harry B. Ireland Suprise, Starlight Crown.

SEPTEMBER FLOWERING —

WHITES: Bobbin Head Stardust, Balkis Miami, Balkis Seagull, Mary Ann Martin Flood, Pearl Balkis White Cloud.
PINKS: Ann Green Plotkins, Hubert Cambourne Lois, Rosarita Rubens.
YELLOW: Hawtescens Goldrush.
GREEN: Barcelona Magic Wand, Pearl Balkis Greensleeves.
RED: Warona Tommy.

OCTOBER FLOWERING —

GREEN: Rosemary Upton No. 3.
PINKS: Anita Sylvia, Anita Jean, Rosarita Lynn Dedman.
YELLOW: Sayonara Aureolin.

☆ ☆

THESE ARE LOCAL FLOWERING TIMES WITH NO ALLOWANCE FOR HEAT. OTHER STATES, PARTICULARLY SOUTH AUSTRALIA, WILL FLOWER APPROXIMATELY THREE WEEKS LATER.
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Australian Orchid Review

PUBLISHED QUARTERLY

Volume 39, No. 4 75 cents December, 1974

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13 OCT 1975



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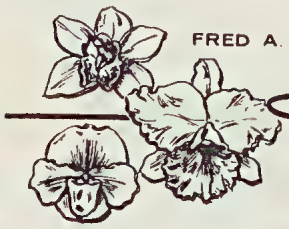
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Pharaoh 'Pathfinder' x Pharaoh 'Perfection' — 100% pure-colour.
Pharaoh 'Pathfinder' is the earliest (May) and the heaviest substance of all our Pharaohs. Pharaoh 'Perfection' is our most shapely. Expect quality whites $50

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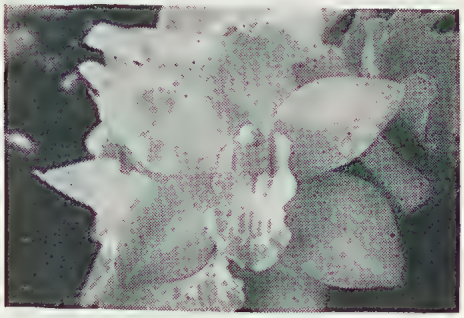
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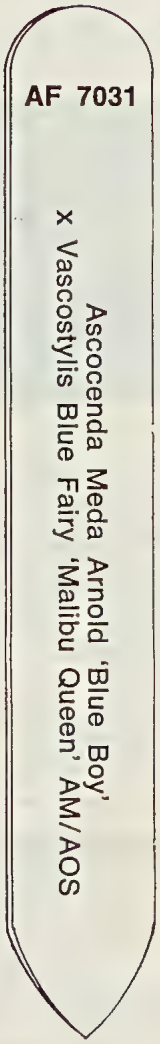
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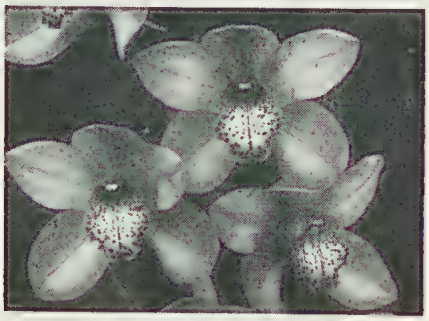
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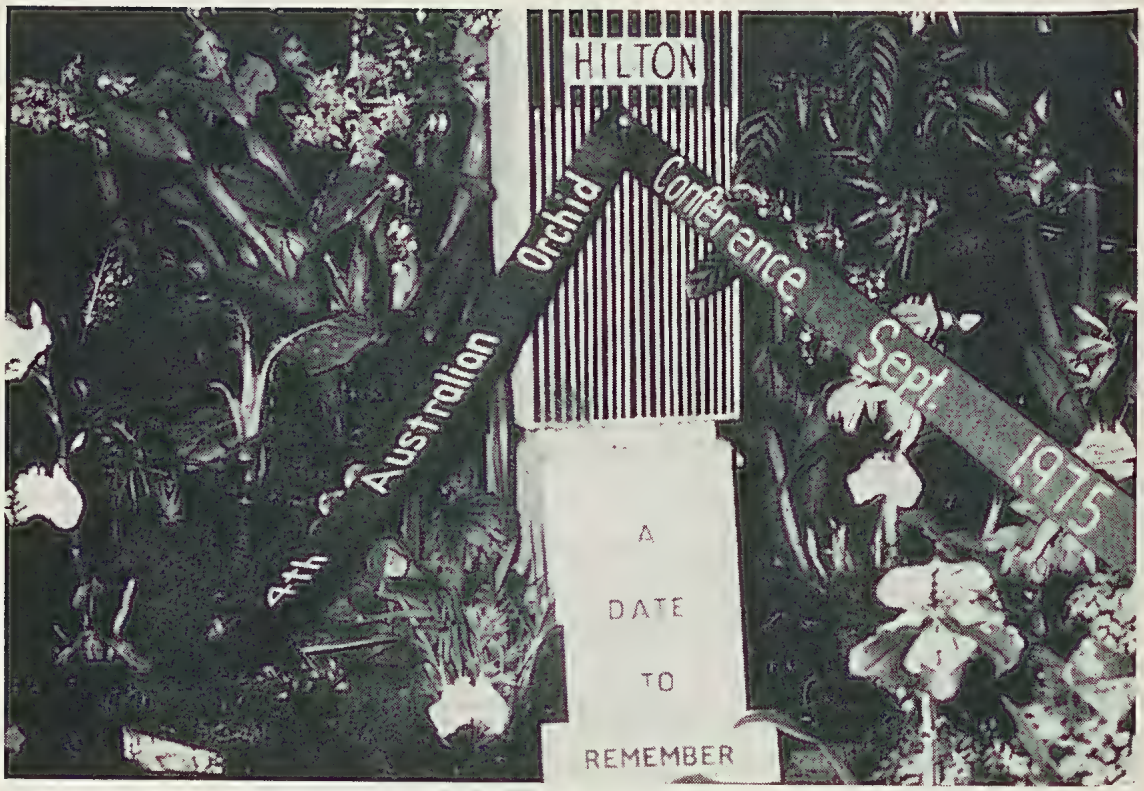
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Paphiopedilum Orchilla 'Chilton' AM/AOC-OSNSW (Colour) .... Cover

Orchid names: A species of orchid has both terms in italics and only the first term has a capital. With hybrids the generic name (first term) is in italics but the second term is in roman with a capital letter. The name of a genus used in a non-botanical sense is in roman type and has no capital.

COVER STORY

Mr. Reg Trenerry of Northbridge, N.S.W., is famed as a grower of the genus *Paphiopedilum*, and many genera of cool growing orchids. A year or two ago he was runner-up for the award of Orchid of the Year, but this year achieves a well deserved success with his Paphiopedilum Orchilla 'Chilton'. Australian Orchid Council Genera of the Year are described and illustrated on pages 180, 181 and 184 — with the full list of 1973-74 A.O.C. Awards on page 179. This list and the illustrations give a comprehensive picture of today's top Australian orchids.



Orchid Society of N.S.W. Spring Festival

Winner's Theme for 1974 will be Australia's Winning Theme for 1975

The picture shows part of the Cumberland Orchid Circle's winning display at the N.S.W. Orchid Festival. Cumberland until this year had seemed to be one of the smaller outer suburban Societies, but this year they romped in as clear winners against stiff opposition.

It was no fluke either because the average quality of their flowers was very high, they had a wide variety in genera too, and the theme was outstanding: nothing less than the forshadowing of 1975's great event the Fourth Australian Orchid Conference.

You can depend upon it that every Australian participating Society will be striving hard to project the same high standard into their 1975 entries. You can depend upon it too that your Host Society for 1975 will be striving to ensure that every participant has the time of their lives.

N.S.W. Grand Champion this year was *Lycaste* Koolena 'May', owned by Mr. F. Alcorn. The magnificence of this many-flowered plant with its attractive flowers and colours should result in a great demand for lycaste seedlings. Reserve Champion was a comparatively unknown cymbidium carefully grown by Mr. C. Barrie, *C.* Narela 'Jennifer'. Parents are *C.* Balkis x *C.* Whyba and the cross was registered by Wondabah in 1967.

Second and Third places for Displays went to Eastern Suburbs O.S. and Five Dock (R.S.L.) O.S. respectively. Best Tabletop Display to Mr. and Mrs. Cardwell, and Best Native Display to Berowra O.S. by a very narrow margin from Manly-Warringah O.S.

This year the Society moved away from the shopping centre complex to a hall-type display, venue being the Ryde Civic Centre. This was a nice setting but had no easy access for passing traffic which militated against financial success. In every other respect it was a memorable Festival.

Champion Native was the hybrid *Dendrobium* Peter shown by Mr. M. Corrigan. This cross is from *D.* fleckeri and *D.* falcorostrum and is notable for its clear yellow colour, wide segments and good substance.

FOURTH AUSTRALIAN ORCHID CONFERENCE

Some sights, sounds and scents of Sydney

RONALD KERR

When you come to Sydney for the Fourth Australian Orchid Conference a Tours and Entertainment programme will assure you of superb enjoyment.

The Tours and Entertainments Committee, ably led by that old smoothie, Bill Smoothey, know all the delightful spots around which to base the week's itinerary and organise post and pre-conference tours. However, as an individualist — and all orchid folk are such — you will feel the need to do your own thing: to soak in a little of the atmosphere, feel the pulse and savour the traditions of Sydney Town.

Sydney at first brush may appear brash, noisy, crowded, even vulgarly modern and unresponsive to your presence. Do not expect Sydney to take you to its heart until you have taken your heart to Sydney.

Start at the spot where Australia started. The day you arrive, or the first free night, or very early in the morning, bus, or better walk, to Circular Quay, and if the breeze is gentle you'll smell the sea, certainly feel its beauty, maybe feel its presence through a giant liner at the Overseas Terminal or from the sleek little Japanese fishing boats moored on the Opera House side.

But we have come to do pilgrimage to a simple brass plaque on the nor-west corner of the Customs House, that fine Victorian building facing its own square. This states that upon or near this spot Governor Phillip proclaimed the establishment of the colony of New South Wales in 1788.

Today the area is all bitumen and scurrying people, nearly two centuries ago it was the edge of a long inlet that reached to what is now Bridge Street, and fed by clear water from a rocky stream.

Stand at this point and visualise the neat array of Redcoats, the uneven lines of drab-grey clad convicts, the handful of free settlers, the Governor and his officers in full ceremonial uniforms.

Among the officers — nearly all of whom were selected by Sir Joseph Banks for their scientific as well as soldierly attributes — would be Surgeon-General White, a botanist as well as surgeon, and Lieutenant Gidley King, a naval officer and botanist whose agricultural knowledge saved the colony.

Perhaps from a rock where you are standing Surgeon-General John White removed the specimen of *Dendrobium linguiforme* which Sir Joseph Banks gave to Olaf Swartz, the Swedish botanist, to be used as one of the two species upon which the genus *Dendrobium* is founded. Dr. White recorded that it "came from rocks along the shore".

Walk around now to the Opera House and admire the Bridge and the harbour boats, and at night the lights, reflecting as you go that on the hill above Macquarie Street the same Dr. White probably collected the specimens of *Dendrobium speciosum, Thelymitra ixiodes, Diuris punctata, D. aurea* and *D. maculata* which Banks passed on to Sir James Edward Smith, the famous founder of the Linnean Society. Sir James named and described these in his "Exotic Botany" published in 1804.

Looking across the waters of Sydney Cove during your stroll around the Opera House towards Dawes Point you will be awed by the immensity of the bridge and intrigued by the early nineteenth century buildings. Note the row of old Bond Stores near the Water Police depot, the lovingly restored Cadman's Cottage now open daily for inspection, the dome of the telescope house on Observatory Hill.

A walk over to Dawes Point will reward you. In George Street North the Old Spaghetti Factory could assuage your inner pangs, but first turn left to the convict-hewn Argyle Cut which takes you under the Harbour Bridge approaches to the historic Garrison Church and the fine old houses of Argyle Place. Lower Fort Street leads to the old stone Hero of Waterloo pub which dates back nearly to 1815 and is still trading. A hundred metres on there is a gracious old building which houses the Australian American Association. Here, on the second Friday in the month you would be welcome at a

meeting of Sydney Group Australasian Native Orchid Society.

Walk back to Observatory Hill for the view, and back to the Argyle Cut to reach the Medcalf Bond which is on the left as you pass under the Argyle archway. The Bond is now an Arts Centre full of interesting handicrafts in an old-world atmosphere. A place to browse.

Meander now to Macquarie Street, or take a taxi if time is short. Glance at Parliament House which started out as part of Macquarie's Hospital paid for with a rum franchise. Call in next door at the Public Library and go to the picture gallery section of the Mitchell Wing for a time capsule trip into Australia's past. Here, too, card holders may examine the orchid papers of such great botanists as Robert Brown, Baron Sir Ferdinand von Mueller, Robert Fitzgerald, Dr. Richard Rogers and the Reverend Herman Rupp.

An easy saunter across the road takes you to the Royal Botanic Gardens and magnificent harbour views. The Victorian-style glasshouses are beautiful and the orchid section is very strong on species, some of which are out at all times of the year. Specific queries on Australian orchids can be answered at the Royal Herbarium by Mr. Don Blaxell, or if he is not available, by Parramatta Orchid Society member, Mr. Peter Hinds.

Just below the refreshment kiosk you may happen upon the grave of Allan Cunningham, explorer, botanist and Gardens curator, who named some of our orchids and acted as a collector for Professor Lindley.

At the Opera House end of the Gardens is the Conservatorium of Music, a building started by Governor Lachlan Macquarie as stables for a new Government House and condemned by Commissioner Bigge in 1820 as too extravagant for a "convict colony". The present Government House lies between the Conservatorium and the Opera House. This fine structure blends into its park setting like part of it. It dates from 1851 and superseded the old Government House at Parramatta, the main part of which was completed by Governor King in 1800. The old Government House has been faithfully restored and furnished with period pieces by the National Trust. It is open Tuesdays, Wednesdays, Thursdays, Sundays and holidays.

Here in 1802 came the botanist Robert Brown after refusing a proffered horse or carriage so he could walk the fourteen miles from Sydney and collect specimens on the way. Robert Brown named 114 of our orchids and was responsible for the first great systematic study of Australian plants.

Encouraged by Governor King, Brown set up a nursery on the bank of Parramatta River just below old Government House. Plants from the Sydney area, the Hunter River and Van Dieman's Land were housed here while Brown awaited the return of Captain Flinders from England. But Flinders had been detained by the French at Mauritius.

After a collecting foray Brown and King would spend hours in the nursery discussing the botanical treasure trove. While at Parramatta call at Experiment Farm Cottage where the first wheat was sown. It is in Ruse Street, named after the man who did the sowing. Around the corner is Australia's oldest extant building, started by John MacArthur in 1792. It has recently been taken over by the National Trust but is not yet open to the public. Hambleton Cottage in Hassall Street is another MacArthur building. It is open to the public. The Lancer Barracks and St. John's Church, both near the railway station, are among the many other historical buildings to be found in Parramatta.

If you happen to be there on the fourth Tuesday in the month drop in on the Parramatta Orchid Society at Todd Hall, Jubilee Park, Marion Street around 7.30 p.m.

But perhaps you are eager to dash back to town for a seamy sinful night at Kings Cross. If you get back while it's still daylight you can walk across the Domain, entering from Macquarie Street via the Public Library end, or past the old Mint Building, originally the southern wing of the Rum Hospital. If the latter take in the classic lines of Greenway's St. James Church and the Hyde Park Barracks, now Law Courts, and pause awhile to appraise the classic Gothic proportions of St. Mary's Cathedral.

After crossing the Domain you may be in time for a call at the Art Gallery to imbibe a little cultural atmosphere in preparation for the Cross. From the Gallery you may pick your way through green banned buildings to William Street which in a few years time will be Sydney's showpiece thoroughfare, and

shows signs of it already. At the top is Darlinghurst Road leading to Macleay Street.

No matter what the hour you will find life at the Cross. People criss-cross each other with almost the frenzy of ants in a disturbed mound. Some shops never seem to close. Restaurants and night clubs are there in plenty, ranging from the quiet and intimate to the grandiose and noisy. Some specialise in foods like rattlesnake steak, Mexican tamales and hot Indian curries. If you have time and stomach you can sample the national foods of a dozen countries. But keep a tight grip on your wallet.

Many eating houses have entertainments ranging to full revues and lengthy plays. No doubt if you look hard enough you will find plenty of intellectual stimulation — but then this could be one night you might wish to be short-sighted.

Taronga Zoo is a must! Its landscaping is beautiful and its setting superb. The Aquarium is huge, an underground building features nocturnal animals, a rain forest aviary is so designed that you walk among the birds, and it houses 500 animal species. Reach it by a very pleasant ferry trip from the Quay.

For magnificent scenery and the tang of salty air in your lungs there's the hydrofoil trip to Manly. Or perhaps you might prefer a luncheon or dinner cruise on the harbour. Or a sailing boat cruise.

If you have specialised interests they might be catered for at the Australian Museum in College Street which deals with natural history; the Mining Museum in George Street North, or the Museum of Applied Sciences in Harris Street. There are numerous private art galleries, small theatres and specialised societies.

When registering mention your special interests and efforts will be made to obtain relevant information.

There's so much to do and see in Sydney you should plan to come a week early and/or stay a week longer. In two or three weeks Sydney will become a part of yourself — an experience to relish the rest of your days.

Put yourself on the mailing list for further data by sending your name and address now to Mrs. Maude Tyler, Honorary Secretary, Fourth Australian Orchid Conference, 29 St. George's Crescent, Drummoyne, N.S.W., Australia 2047.



Some members of the W.A. Native Orchid Study Group meet at Medora on the Group's first field day.

Strong Native Group

The W.A. Native Orchid Study Group has got away to a good start. Following the inaugural meeting in March, the group is meeting monthly and has held and is planning field days to gain first-hand knowledge of indigenous orchids in their natural habitats. Some future excursions are planned to Lancelin, Bunbury, Mundaring, York and Manjimup. Interest in the group's activities is spreading and correspondence has been received from many country areas. (One farmer stated that he had 100 acres of freehold land kept in its natural state because of its abundance of orchids, and has invited the group's attention).

The group meet on the first Friday each month at the film room, Agricultural Department, Jarrah Road, South Perth. Membership numbered 38 at August meeting. Group Membership $1.00. Members must be financial with the Orchid Society of W.A.

Officers of the Group:—

Chairman: Herb Foote, "Foothills", Hale Road, Forrestfield 6058.

Secretary-Treasurer: Lal Sheppard, 31 Tonkin Road, Hilton 6163.

Slide Librarian: Reg Lander.

Committee: Mrs. Jean Long, Sir Crawford Nalder, Messrs. Harry Goodchild, Roy Brown and Ken Adcock.

HONOURS FOR POPULAR SECRETARY

Long time secretary of the Eastwood (N.S.W.) Orchid Circle, Mrs. R. Woodcock, was appointed a Life Member at the October meeting. Enthusiastic acclamation by members indicated her great popularity. Mrs. Woodcock's thorough organising has been a major factor in the success of the annual shows which have raised thousands of dollars for charity.

ELEVEN YEARS OF LIVING WITH ORCHIDS

ANNA HOFNER

Well, 11 years have passed since Jack bought me my first orchid, a little *Paphiopedilum insigne,* and as you have read in my previous two articles (Orchids in our bedroom — Orchids in a Wardian Case), our collection has steadily increased, and our imagination had to work overtime to coordinate our wishes with our finances. We certainly did not leave it just at growing 'glasshouse orchids', oh no, not us, we had to get involved with Cymbidiums as well, and Jack first built a little 9' x 12' shadehouse, then a 12' x 36' shadehouse.

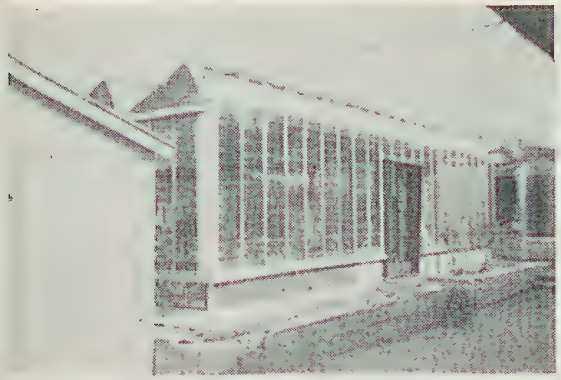
At first we flowered our Cymbidiums in the lounge. Then, when we ran out of space, the 'morning sun side' of the garage roof (galvanised iron) was replaced with PVC sheets to extend the 'flowering area', and then we were faced with having to build a flowering house.

Meanwhile, of course, our 9' x 12' Derby glasshouse appeared to be shrinking in size— not that we were overstocking it, it was the glasshouse that shrunk! So, back I was, nagging hubby: "You, as a cabinetmaker, should be able to come up with an idea where we can meet all our needs with one house!" And Jack put his thinking cap on. (Who said 'husbands are good for nothing'?) We needed a sleep-out as the house gets very hot in summer, a flowering house for the Cymbidiums, and a larger glasshouse. Luckily we had in all those years made a lot of friends through the Orchid Club, and we went visiting, looking, looking, looking . . . and then Jack started drawing . . . one plan after the other, the one would not serve us as an outdoor living area, the other would cost too much to keep heated or cooled, respectively . . . and finally he came up with the idea which he realised.

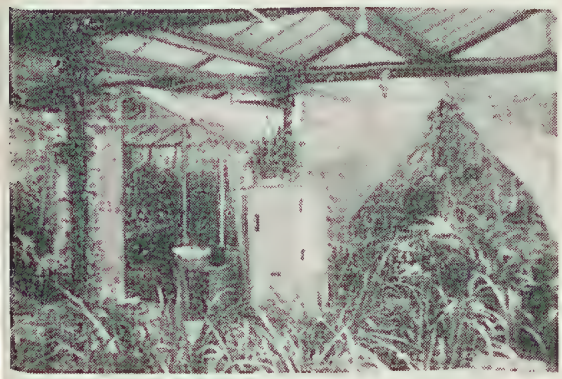
He built a 32 ft. x 36 ft. timber frame (plastic coated) with a multiple sawtooth roof; the side facing north is glass, the side facing south is Hardiflex. The downwalls are glass in glazing bars to within two feet off the ground. The "flowering house" section of the glasshouse finishes with aluminium fly screens and the "glasshouse" section with Hardiflex sheets. The ridge ends facing northwest are also closed only with fly screens. Council permission was only granted if we pull down the existing Derby glasshouse, as we were over the limit of permissible roof area. So the Derby glasshouse was duly dismantled and re-erected inside the glasshouse bordering onto the south-east wall of the glasshouse, which in turn is now the border for the still existing shadehouse. Next to the Derby, now "inside", Jack built wiremesh benching and a wiremesh "A" frame, to accommodate Cattleyas, Oncidiums, Dendrobiums, and so on. Over the top of this section of the glasshouse he strung wires 18 in. apart, and in winter he just pegs plastic sheets to the roof of the Derby, runs them over the wires and down the sides, back and front, and so we have now: a Derby hot house, which is kept at 65° F., and an intermediate glasshouse under the plastic tent, which the heat escaping from the Derby keeps at 50° F., with only very occasional drops in temperature to below 50° F. On the southern side of the Derby, to make maximum use of the escaping warmth, we grow all those plants needed for the Shows, e.g. Monsteria, Palms, various tall varieties of ferns, and "Maiden Hair" ferns. This is the eastern 32 ft. x 12 ft. area of the new glasshouse.

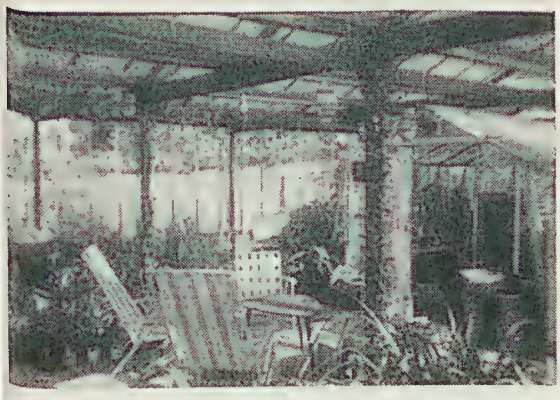
The western area is, in winter, used as flowering house, with a fan in the top and constant air circulation due to the wire netting at the top and bottom; it keeps the blooms clean. In summer, however, it does accommodate us. All the hardier ferns, which are in the shadehouse in the flowering season in winter, are in the glasshouse in summer, and so are our folding beds and a table setting for six.

The ground is covered with heavy gauge plastic, a 2 in. layer of sand and some eight tons of gravel, with the main walkway being concreted. A mighty midget-mister runs over the ferns, the fan runs in the top of the Derby glasshouse operated by a thermostat, and the roof is so constructed to (with a









Top: Exterior of the house. The nearest end is used as a flowering house and the far end as a shadehouse.

Second from top: Interior showing the original glasshouse, now used as a hot house. Any escaping warm air is used in the flowering house.

Two bottom photos: Flowering house showing the living area. This reverses the usual practice of bringing orchids into the home: the home is brought to the orchids.

---

minimum of effort) allow no sun into the house during midsummer, early morning and late afternoon sun in spring and autumn gradually increasing to full sun in the cold months of the year. The Vandas and other sun-lovers are positioned alongside the outside walls, as necessary moved along to give them maximum sunlight. However, if we should decide to increase our collection of Vandas and hard-cane Dendrobiums, all or part of the house can be converted within minutes to allow a certain percentage of direct sunlight into the house provided the sun is shining.

Now, my friends, this is (apart from another shadehouse approximately the size of the existing one) the last concoction we intend to build, from now on we either have to stop adding, or it will be "back to our bedroom with orchids!"

8 Amanda Way, Reynella South, S.A. 8161

OVER NEW ZEALAND WAY

Waikato Orchid Society has an excellent Spring Show each year around the middle of October. Unfortunately, the details came too late for the September issue. Next year it is hoped to publish details of all New Zealand Shows. Meantime, if you are down Hamilton way on the fourth Tuesday of a month drop in at the Old Folk's Hall, Clarence Street, Hamilton. The Secretary is Mr. E. Young, phone 6-5411. Visitors and intending new members are very welcome.

NOTED BRAZILIAN ORCHIDIST DIES

Just as we go to press a letter from Senora de Mendonza conveys the sad tidings that Dr. Luys de Mendonza has passed away.

Dr. Mendonza founded the orchid journal *Orquidea* thirty years ago and edited it over this period. He was a doctor of medicine, a professor, and, upon his retirement he organised a Government School of Gardening in Rio de Janeiro. Nearly every orchid society in Brazil was founded by him. He achieved world-wide recognition for his work as a conservationist. Many Australians met him at the Botanic Gardens in Rio on their way home from the Seventh World Orchid Conference. Vale Dr. Mendonza and sincere condolences to Senora Albie de Mendonza.

★ STAR ORCHID

Haemaria discolor



Reported by
PHYLLIS COTTON

The Queensland Orchid Society awarded to the grower, Mrs. P. Zupp, of Arafura Street, Mt. Gravatt, a Certificate of Cultural Commendation for her outstanding plant of *Haemaria discolor,* syn. *Ludisia discolor.*

This particular plant was in excellent condition, free from damaged foliage, and carried fifty flowering spikes, also clean and without damage.

Grown in a squat azalea container, the entire overall size of the plant measured approximately 60 cm x 60 cm. The presentation was very nice to look upon, and all those who had the opportunity to admire same at the July meeting of the Brisbane Orchid Society — where it was judged — were astounded to see such a large display in the one pot and felt that the grower's achievement in bringing the plant in without damage, was also worthy of comment.

At the following meeting Mrs. Zupp very kindly gave many pieces of this plant away to members who did not have same, and the following explains her method of culture:—

"I grow *Haemaria discolor* in clay pots, and I do prefer this type of pot for this particular orchid. The mixture used is a coarse type cymbidium compost, to which is added a small quantity of fir bark and charcoal, drainage being a very important factor for good growth.

"It is best to repot yearly, or at least every two years, really depending on the condition you find the mixture is in after flowering. To the new potting medium a small quantity of mag-amp is added, and then I only water lightly, keeping the pot evenly moist until the new growth is well away. When this is evident the watering is stepped up and I begin to fertilise regularly every couple of weeks. The programme is usually with two lots of fish emulsion to one light application of "Aquasol" or "Garden Gold".

"The container is left on the ground in the glasshouse, which has strong light, until the growth is well away, and then elevated to a stand about 60 cm high.

"My glasshouse has a glass roof, the highest portion being about 1.8 m, with glass on the west and east walls, and vynlon on the northern wall, and a brick wall on the south side. All told there would be 12 vents in the east and west walls. The floor is of washed river gravel.

"The plant has never shown evidence of fungus or pest attack, and I do not particularly spray it alone, but when spraying at intervals, with miticides, insecticides and fungicides, it of course gets a spraying."

DO YOU REMEMBER

The 14th September, 1975? It's not a date to forget because the Fourth Australian Orchid Conference starts then in Sydney — a city of a thousand delights. Write Conference Secretary, 29 St. Georges Crescent, Drummoyne, N.S.W. Australia 2047.

CYMBIDIUM DEVELOPMENT

PART III

ALVIN BRYANT

It is true of today's world that the show and cut flower requirements for the Cymbidium are very close. The bulk of the finest clones have at least one tetraploid parent and as tetraploid characteristic usually dominate when used against diploids, their shape and raceme characteristics warrant closer attention. This is even more important when it is realised that relatively few tetraploids are used to a major extent in the world's breeding programmes. Of these, a great number are Balkis or close Balkis derivatives.

Because of this, tetraploid development can be viewed by looking at development lines arising from (1) A.W.B. and Rosanna 'Pinkie' descendants (2) lineage where Pearl Easter has been added (3) lineage where Pauwelsii 'Compte de Hemptine' or Babylon 'Castle Hill' has been added and (4) lineage where Early Bird 'Pacific' has been added.

It is well known that Alexanderi 'Westonbirt' and Rosanna 'Pinkie' were the parents of the Balkis's and many fine clones exist displaying cardboard substance, fine lips with markings ranging from blushes, through light dottings to heavy markings, against a background of large furl tree tepals. The majority however, tended to be rectangular flowers with the dorsal sepal too low, the base sepals too wide and the tips of the petals too pointed to give true aesthetic balance.

One of the difficulties in choosing the right parent clone seemed to be the masking effect of Alexanderi 'Westonbirt' as regards petal shape. Selfings of A.W.B. invariably had pointed petals whereas selfings of Rosanna 'Pinkie' showed in some cases aesthetically proportioned petals. Almost all the Balkis's were pointed in their petals and the question was which one carried the aesthetic proportions. Balkis 'Perfection' hinted at being one and it did a magnificent job when crossed with Rosanna 'Pinkie' in the Etta Barlow cross. As far as the actual flower went it was also in the breeding line to eliminate the other faults to give the finest in shape development.

Here blooms appeared with 1½ in. petals, 2 in. sepals, 1½ in. lips, fully rounded flowers, dorsal sepals lifting at the tips to give virtually perfect flowers. Unfortunately, while the flowers were so perfect, the racemes were not and even though a number carried 12 or more blooms, they turned in against the raceme or were too short and thick in the stem behind the bloom itself.

Inevitably Pearl Easter was crossed with A.W.B. (Snowsprite), Rosanna 'Pinkie' (Mary Ann) and Balkis (Pearl Balkis). Its large size, large labellum and fine raceme offering were too valuable to be ignored even though it lacked shape. As so often happens however, it was capable of reflecting the shape of the other parent and some fine Mary Anns and Pearl Balkis's appeared. Selfings of Pearl Easter never made a case for public admiration but they showed how fine the raceme offering of Pearl Easter could be and this makes a first-rate prospect for perfect clones to appear in intercrosses between the Etta Barlows and the Mary Anns providing the hybridiser choses his parent clones skilfully.

It might well be asked what the perfect result is expected to look like, for everyone's concept of a perfect flower will vary according to their own areas of emphasis. I have in mind the showbench standard and cut flower requirements weighed against the sufficiency of variation available to provide each person with what they require.

It is obvious at this stage the main point of concern is the development of the petal in relation to the flower. All other qualities are sufficiently present. Pauwelsii 'Compte de Hemptine' had narrow tepals but it seems evident from examining its progeny, that it offered prospects of good petal development with the tip being aesthetically proportioned, the middle section being quite broad although there was a sudden narrowing in the third of its length adjoining the column.

Another significant point is that the tepals of Pauwelsii 'Compte de Hemptine' progeny, leave the column without coming forward first as do Alexanderi 'Westonbirt' progeny. This may be readily observed in the trumpet-like side profiles as against the stark labellum and column exposure. I was always expecting to see an "out of this world" Nam Khan

(Pauwelsii 'Compte de Hemptine' x Rosanna 'Pinkie') but a size dimension seemed to be lacking and it was not until the Sheba (Nam Khan x Vieux Rose) cross that outstanding progeny appeared. However, the best clone I saw carried column deformity.

Early Bird 'Pacific' has much better shape in its tepals than is generally realised. In spite of the spoilage in the Stanley Fourakers (Early Bird 'Pacific' x Alexanderi 'Westonbirt') through small labellums, forward tepals and miniaturisation, there appeared to be more clones with 1½ in. petals than any other cross with Alexanderi 'Westonbirt', whose progeny I have observed. It will be noticed that the flowers of Early Bird 'Pacific' hang their heads to some extent. This may be nature's way of protecting a flower, for it is not hooded. As well it drops the two bottom sepals to deepen the bloom. This was a necessary quality for final perfection, for as wider segments were developed so was it necessary for the tepals to open back further to avoid tulip-like flowers with petals rolled in on edges, as happened with some of the Etta Barlows. The appearance of wider petals was often at the expense of the thickness of the petal edge and as a result, such flowers bruised more easily. In particular, flowers with beautiful glittering crystalline white petals bruised so readily, that they were useless as cut flowers. This property seems to originate from *C.* eburneum and pass into the Westonbirt progeny. The flatter whites for this reason are a much safer breeding proposition, if cut flower yield rather than show bench yield is the basis for the cross.

Returning to Early Bird 'Pacific' and its forward petals, it is observable that the petals leave the column at a forward angle, curve outwards and then back towards the column again. This seemed to pre-dispose progeny gained from Westonbirt crosses to greater spoilage, than those made with Pauwelsii 'Compte de Hemptine' descendants, where the petals were at a greater angle to the column. This was borne out by comparing the Stanley Fourakers flowered with the Sylvania (Early Bird x Sheba) cross. The real advantages or otherwise of this type of thinking will be seen in the future generations.

One of the disadvantages of Cymbidium development in Australia is contained in the standards set for Cymbidiums to be awarded. There is no provision for the case where in order to produce something new a parent quite different to the standard has to be introduced into the breeding programmes. The early hybrids can produce clones which are an outstanding jump forward but unable to gain recognition because they still show evidence of their atypical parent which offered the new characteristics. A classical case of this is that of Early Bird 'Pacific'. This clone heralded the tetraploid breakthrough in the spread of flowering time and other vital characteristics. Its descendants however, are obliged to remain in the shadows until they reach their end result which I am quite sure will place them at the top of the Cymbidium world.

Promising lines of development such as the Mazatlans (A.W.B. x Nam Khan), the Cleo Shermans (A.W.B. x Babylon), the Ann Greens (Babylon x Rosanna), or Vieux Rose 'Del Park' descendants all offer rewarding prospects, particularly from the shape and raceme habit combinations but with the exception of the Ann Greens they also are slowed by the problem of working out which clone is really carrying the full form characteristics. The Rhonda Iffland cross (Balkis 'Luath' x Mazatlan 'Elegans') showed Mazatlan 'Elegans' to be such a carrier — a laborious way to find out but still the only way.

With any hybridising programme the policy can only be one of feeding in as many desirable properties as is possible in each cross and then flowering sufficient of the progeny to gain a clone with the greatest number of these properties. The process then is repeated. Selfing of a clone would not occur until it is felt that all the desired properties were present in the one clone. Once breeding clones are good enough to be selfed, a succession of selfings will eventually produce a clone which will breed true, in that its progeny will exhibit uniformity — an ultimate aim in many hybridising lines.

18 Kangaroo Road, Sylvania 2224

LOSS TO VICTORIAN A.N.O.S.

On medical advice Mr. David Cannon resigned as President of the Victorian Group of the Australasian Native Orchid Society as from the October meeting. David fell victim to a heart attack some weeks ago and is now on the slow road to recovery. Until this unfortunate event his leadership had been vigorous and constructive, and he has been quick to step down in the Group's interest rather than continue in a figurehead role.

Not only have members extended David and his wife their best wishes for a quiet, steady and complete recovery, and the hope to see him once again at meetings early next year, but in practical fashion they have organised working bees on his orchid collection.

A.O.C. Awards

The National Awards for 1973-74

108 *Ascocenda* Medasand 'William Olive', HCC/OSNSW.
A nicely grown plant carrying one upright raceme holding nine open flowers and two buds, consistent in size to good flowers of this genus. Colour was bishop violet.
Owner: Mr. H. Wight.

109 *Blc.* Crimson Gold 'Wayside', AD/AOC-OSNSW.
The plant held two heads of flowers each carrying three blooms. The flowers were so held to present an excellent display. The colour was unusual, as the petals and sepals were uranium green and the labellum cardinal red.
Owners: Mr. & Mrs. W. Cannons.

110 *Dendrobium* (Amethyst x Helen x Fukemura) x (Lowana Red x Lady Hamilton 'Wayside'), HCC/AOC-OSNSW.
Eight fully open flowers and three buds were held on a straight upright spike. All flowers were evenly spaced and fully displayed. Colour was bishop violet.
Owners: Mr. & Mrs. W. Cannons.

111 *Paphiopedilum* Startler 'Glace', HCC/AOC-OSNSW.
Plant carried one glistening flower on a strong straight stem. Colour was mainly magenta rose with some segments showing beetroot purple.
Owner: Mr. R. Trenerry.

112 The Orchid of the Year. See colour illustration.

113 *Phalaenopsis* Schone Von Celle 'Idlewild', AM/AOC-OSNSW.
A well-grown plant with one arching spike holding nine open flower and three buds all of which were evenly spaced along the raceme. Flowers were particularly well shaped. Colour was white with a touch of mimosa yellow on each side of the labellum.
Owner: Mr. G. Giles.

114 *Phalaenopsis* Pink Jewell x *P.* Estrelitta 'Idlewild', AD.
The plant carried a branching spike which held fifteen open flowers and 12 buds. Flowers were very round and coloured clear phlox purple. Inside the labellum the colour changed to saffron yellow spotted with purple.
Owner: Mr. G. Giles.

115 *Cymbidium* Henry Davis x *C.* Balkis 'Cecil Park', HCC/AOC-OSNSW.
One bold upright spike carrying ten open flowers was held on a well-grown plant. Each flower was well spaced from the other and fully displayed. Each flower was all-over white with the segments finely edged with a border of Amaranth Rose making them most attractive.
Owners: Mr. & Mrs. J. Gulbis.

116 *Bc.* Mount Juneau 'Burra Beauty', HCC/AOC-OSNSW.
Two flowers were on the plant and they stood erect and apart on a strong stem. Both flowers were large, had excellent balance, well filled in segments and a wide fully displayed labellum. Colour was orchid mauve with the labellum lined with sulphur yellow.
Owner: Mr. L. Cuttler.

117 Best Phalaenopsis.

118 *Rhyncostylus Gigantea* 'Royal Glow', AD/AO-OSNSW.
One raceme was on the plant holding twenty-eight flowers, massed together and being such unusual colour made the raceme very distinctive. Colour was very deep red purple.
Owner: Mrs. B. Ball.

119 *Cattleya* Tiffin Bell 'Orchidglade', HCC/AOC-OSNSW.
Only one flower was on the plant, but it was of excellent form. The petals had an exceptional overlap which gave the flower a complete filled in appeareance. Colour was all-over white with the labellum having a yellow surround in the throat.
Owner: The late Mr. C. Chapman.

120 *Lycaste* Kooleena 'May', HCC/AOC-OSNSW.
The plant held nine flowers which had excellent form and colour. All flowers supported themselves unaided. Colour of the petals and sepals was red purple and the lip was white with blotches of red purple and a splash of yellow in the throat.
Owner: Mr. F. Alcorn.

121 Best Cattleya. See colour illustration.

122 *Rhynchovanda* Wong Yoke Sim 'Moody Blues', AD/AOC-QOS.
The plant held one raceme which held flowers that were compact and fully displayed. The features of the flowers were their exceptional blue colour and arrangement.
Owner: Mr. B. Paget.

123 *Dendrobium* Sybil Jones 'Birkdale', HCC/AOC-QOS.
The plant carried nine well shaped blooms on a strong stem and were fully displayed. Colour was red purple and in particular was clear and uniform.
Owner: Mr. N. Noble.

124 Best Vanda. See colour illustration.

125 *Blc.* Nosegay 'Doreen', HCC/AOC-OSWA.
The plant carried three flowers held on a strong stem well above the foliage. Colour of the sepals and petals was pastel mauve with the labellum chartreuse green shading out to a lighter tone and having a splash of cyclamen purple in the lower centre.
Owner: Mr. & Mrs. J. Fleming.

126 *Cymbidium* Harry Shepherd 'The Prize', HCC/AOC-OCSA.
The plant had one spike holding nine flowers on a strong stem. Colour was mainly white and with the sepals basally diffused with spinal pink. Labellum similarly coloured with keels of buttercup yellow.
Owner: Mr. B. Hansen.

127 Best Cymbidium.

128 *Oncidium* Splinter 'Norman', HCC/AOC-TOS.
The main spike on this plant carried 264 flowers and was four feet six inches in length. Although the flowers were small they were so massed and exceptionally displayed to make the raceme very attractive. Colour was primrose yellow with the labellum having a central mound of ox-blood red.
Owner: Messrs. C. & P. Nicholas.

129 *Doritaenopsis* Memoria Clarence Schubert 'Stonyfell', AD/AOC-OCSA.
One arching spike was on the plant holding ten flowers. All flowers had a most intense and vibrant colour and good substance and glistening texture. Colour was doge purple with the inside of the labellum spotted with Indian lake and the keel coloured saffron yellow.
Owner: Mr. M. Ward.

A.O.C. MEETING COVERS MUCH GROUND

The Annual General Meeting of the Australian Orchid Council was held in Brisbane on Friday, September 27, 1974. All States were represented and all retiring officers were re-elected for the ensuing twelve months.

Major items on the agenda were:—

NATIONAL ORCHID COLLECTION

Mr. G. McCraith, Chairman of the Committee appointed to examine the feasibility of establishing a National Orchid Collection, reported that a huge correspondence had indicated a wide interest in the idea. The interest and extent of the work already undertaken indicated that the concept was possible. However, two or three localities might be necessary to cover sites suitable to all genera, with some orchids common to each.

Mr. McCraith dealt with aspects of location, management, maintenance, security and finance, all of which were being investigated.

The Council resolved to continue the project, and the Committee is to report further to the next Annual Meeting regarding means for the implementing of this fascinating project.

ANNUAL AWARDS

Details of all Annual Awards are reported elsewhere in this journal. The Award of Australian Award of Distinction is to be given each year in future, providing there are three eligible plants.

ASSOCIATE MEMBERSHIP

The Council confirmed the admission of six additional Societies as Associates. This entitles them to use of the extensive A.O.C. slide library.

JUDGING STANDARDS

The Council decided to adopt the Standards for Judging Australian Native Orchids and Native Orchid Hybrids as submitted by the Orchid Society of N.S.W. These will be published in the next edition of the A.O.C. Handbook on Judging Standards.

REGISTRATION OF A HYBRID GREX NAME

It was resolved to have a motion placed on the agenda for the Eighth World Orchid Conference to the effect that after eight years the raiser of an orchid hybrid cease to have the exclusive right to register a grex name for it. This would enable any grower who flowers a clone of an unregistered grex to name it.

BOARD OF REFEREES

Mr. W. R. Smoothey was appointed to the Board of Referees to fill the vacancy unfortunately caused by the death of Mr. Leo Giles.

PLANT BREEDERS' RIGHTS

Mr. Russ Martin, Chairman of the Select Committee to investigate Plant Breeders' Rights reported that a national seminar was held on this topic in Canberra during November, 1973. This was chaired by Professor J. R. McWilliams of New England University. At the conclusion of the seminar a resolution was passed to present a case for legislation to cover such rights to the government. The A.O.C. asked Mr. Martin to convey to the Investigating Committee the A.O.C.'s concern with the interests of amateur growers.

ANNUAL MEETING

The next Annual General Meeting is to be in Sydney on September 17, 1975, during the Fourth Australian Orchid Conference.

The Australian Orchid Council — Orchid of the Year 1974

AUSTRALIAN ORCHID OF THE YEAR — 1974 AWARD No. 112

Paphiopedilum ORCHILLA 'Chilton' — Award of Merit.
Sponsor: The Orchid Society of N.S.W. Limited.
A robust plant with one magnificent flower perfectly held and displayed unaided. Colour was mainly Dahlia Purple fading out to Orchid Purple with the dorsal finely edged with white.
Owner: Mr. R. Trenerry.

BEST PHALAENOPSIS — AWARD No. 117

Phalaenopsis Schone Von Celle 'Iceberg' — Highly Commended Certificate.
Sponsor: The Orchid Society of N.S.W. Limited.
Plant held one arching spike holding ten flowers evenly spaced and so held to fully display themselves. Colour was pure white with the labellum lined with Mimosa Yellow on each side.
Owner: Mr. G. Giles.

BEST VANDA or ALLIANCES — AWARD No. 124

Vanda Tubtimtepya 'Mt. Glorious' — Highly Commended Certificate.
Sponsor: The Queensland Orchid Society.
A well above average Vanda which carried ten large well shaped blooms. The colour of the dorsal was red whilst the lower sepals was yellow green veined with purple. The petals were of similar colour to the dorsal with some spotting.
Owner: Mr. A. Gibbons.

BEST CATTLEYA — AWARD No. 121

Cattleya Bob Betts 'White Wings' — Highly Commended Certificate.
Sponsor: The Orchid Society of N.S.W. Limited.
Plant held one single flower on a strong stem unaided. Colour was white with the labellum having heavy marking of yellow in the throat.
Owner: Mr. W. Hughes.

BEST CYMBIDIUM — AWARD No. 127

Cymbidium Pearl Balkis 'Pink Perfection' — Highly Commended Certificate.
Sponsor: The Orchid Club of South Australia Inc.
Plant carried one spike holding eight flowers of good size and reasonably well arranged. Flowers were basically white with medial veining of pale ruby red. Labellum was much the same colouring, but evenly spotted with madder purple.
Owner: Valley Orchids Pty. Limited.

Australia's Top Orchids for 1974

The judging panels of six States voted these the outstanding orchids of 1974. See also front cover and page 184.



Above: *Phalaenopsis* Schone Von Celle 'Iceberg', HCC/AOC-OSNSW. Phalaenopsis of the Year. Carried five evenly spaced flowers on each side of the raceme. The superb shape, even colour and fine substance and texture makes one wonder how much further breeders can go with white phallies. Owned by Mr. Gordon Giles.

Below: *Cymbidium* Pearl-Balkis 'Pink Perfection', HCC/AOC-OCSA. Best Cymbidium of the Year. This clone shows the marked influence of strong tetraploid breeding. Owned by Valley Orchids of South Australia.



Below: *Cattleya* Bob Betts 'White Wings', HCC/AOC-OSNSW. Best of its genus for 1974. One of a fantastically successful cross between *C.* Bow Bells and *C. mossiae*. The cross has proved a real breakthrough for white cattleyas and clones of the cross have proved outstanding parents — in fact it has been used more than any other cross. Owned by Mr. W. Hughes.





THE PHARAOH

From the famous pure white pure-colo
the pure-colour Durham Castle 'Snow F
dimension in white cymbidiums; pure-
propagation represent the finest availabl
pure colours, upright spikes, heavy proc
shape, beautiful flowers.

PHARAOH 'ALMIGHTY' the $100 prize w
with 4 spikes, 16, 13, 13, 12 flowers f
won specimen prize at the same show).
flowers in August.

25 plants

PHARAOH 'REYNELLA' upright spikes
white — a very appealing orchid.

25 plant

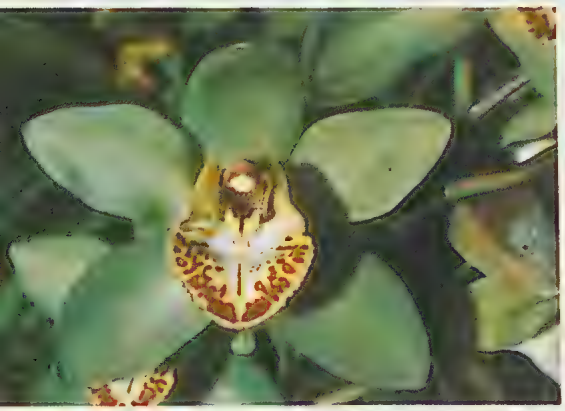
PHARAOH 'PATHFINDER' the earliest at
(over 150). Large flowers, just off-white
early June heavy producer and the flow

25 plant

3 FLASKS (O

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PHARAOH 'REYNELLA'



SLEEPING VALLEY 'EXTRAVAGANZA'

The best June green Cymbidium available. Large 5⅛" flowers. Carries the pure-colour factor.

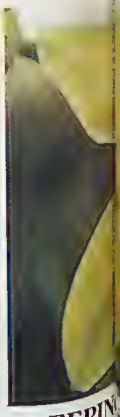
10 ESTABLISHED PLANTS IN COMMUNITY POTS $30



BALKIS 'CAPT. ANDERSON' AM

As well as the qualities shown in the photograph it is large, has a very fine spike habit and is free flowering. Could prove to be the best of this famous name.

30 CM $15, B & L $20, F $30



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WYANGA 'ELANORA' HCC, AD/NSWOS

Successive spikes in July/August/September.

12" $15.00. B & L $20.00



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NEW

USTRALIA

ng Beauty 'Sarah Jean' by araohs have created a new he 3 chosen for meristem of June, July and August— ng, over 4½ inches, superb

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wers in July regularly. Pure

bstance of all our Pharaoh's ctly upright spikes. Regular ber.

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▲ *Australian Orchid Council Vanda of the Year*

Australia's First R.H.S. Award ▼

Above: *Vandanthe* Tubtimtepya HCC/AOC-QOS. A beautiful member of the Vanda Alliance this clone has notable shape and colour. It is bred from *Euanthe sanderana* x *Vanda* Gertrude Miyamoto, which makes it 75% *E. sanderana*. The latter is too often referred to as *Vanda*. A recent ruling of the International Nomenclature Body is that the "i" is to be dropped from a latinised name where it is based on a proper name ending in "er". Owned by Mr. A. Gibbons.

Right: Cymbidium Sleeping Dream 'Tetragold' AM/RHS. This is the first R.H.S. Award made to a spike submitted by an Australian grower. The Award is dated September 24, 1974. Mr. Merv Dunn of Valley Orchids took a plunge and forwarded the spike to London. The result is a triumphal recognition of Australia's leading position in cymbidium hybridising. See Mr. Dunn's story in this issue.



Faith — an orchid quality

MERV DUNN

In 1972, when the buds first appeared on a seedling from the cross *C.* Sleeping Beauty 'Sarah Jean' x *C.* Sleeping Glow, it was evident the plant was of the pure-colour strain and, it appeared that the flowers would be of a green colour. So, to enhance the anticipated green colour, the buds were heavily shaded right up to flowering time. The 13 huge, pure-colour flowers opened a golden-yellow colour and were declared there and then to be the best cymbidium flowers we had ever seen or, even seen pictured. They retain this distinction even today.

When expecting the pollen from this flowering, it was noted to be larger and heavier than normal diploid cymbidium pollen. So much so, in fact, that doubts were cast on its predicted diploid status. The pollen grain weight, coupled with the large size of the flowers and their "Tetraploidy" looks in shape and heavy substance, decided us to have the chromosomes of the plant's cells counted. The count at the University of Adelaide established the plant to be a chance Tetraploid and so, for this outstanding clone of the grex which we had registered in 1973 as *C.* Sleeping Dream, was coined the cultivar name 'Tetragold'.

The plant spiked again in 1973 and acting on advice to not shade yellows, the plant was. left in almost full sunlight. It went against the rules for the flowers opened a concolour lime-green. This year misfortune struck when the four topmost buds, at a small size, were knocked from the spike. The remaining nine flowers were shown at the 3rd Australian Orchid Conference and featured on the Front Cover of the March, 1974 "Australian Orchid Review".

This year, 1974, the plant produced three spikes of 16, 15, 15, flowers which again were not shaded and again were of the same lime-green colour of the previous year. In early September, in an attempt to make a clean sweep for groups of three Cymbidiums at the Royal Show (we had earlier at the Show won firsts for three distinct cultivars and three distinct colours) *C.* Sleeping Dream 'Tetragold' got the nod for one of the group of three distinct export-type orchids for it measured up exactly to what we thought export Cymbidiums should be — clear colour, large, heavy substance, glistening texture — a very beautiful and very impressive orchid.

The first?

There is no record of an Australian orchid receiving an R.H.S. Award prior to the one mentioned in this article and illustrated opposite. The occasion, therefore, is most newsworthy and further demonstrates Australia's lead in cymbidium breeding.

The plant, with many misgivings on our part for it is a large plant and there had been, earlier, at the show, some jostling for positions in the confined show space provided, was loaded into the trailer, taken to the Show, and duly presented.

In showing orchids, faith is a desirable quality — not in the flowers, but in one's self. Faith in one's own judgment of a good orchid and perseverence to keep trying. This was learnt in our first year of showing orchids when a first-flowering Phalaenopsis, in four showings in S.A., between August and October, never got a mention. Later in October, in Melbourne, the same plant, same flowers, won the Grand Champion Ribbon of the 2nd Australian Orchid Conference.

Home from the Royal Show, still with faith in the stud and show potential of "SD4N" as the orchid is known to us, several flowers on one of its three spikes were pollinated, leaving two spikes for show purposes. On the Friday before our Spring Orchid Festival, it was learnt the plant, because some flowers on one spike had been pollinated, was ineligible for the Festival. So, this same day, one spike of flowers was cut from the plant, packed and air freighted to the Royal Horticultural Society in London. It left Adelaide on Friday, September 20, arrived London, Sunday, was delivered to the R.H.S. at lunch time Monday and awarded an AM on Tuesday morning, September 24. Faith has been restored.

70 Somers Street, Brighton, S.A. 5048

ON THE NOSE

Snippet from *The Grafton Orchid World*: "That pervading odour of crushed ants is undoubtedly *Maxillaria tenuifolia*".

HOUSING YOUR ORCHIDS — PART V

THE VERSATILITY OF SHADECLOTH

RONALD KERR

Previous articles have dealt with shadehouse construction and the new reader is referred to the September, 1973 issue "The Simple Bushhouse", and December, 1973, "The Iron Frame Shadecloth House". March, 1974, contains the article "A Wooden Frame Shadehouse".

However, shadecloth is not limited to use in the purely shade-type house. An orchid house that is only a protection against too much sun and insects is still one which limits the genera you can grow to those which adapt naturally to your locality.

The wooden frame shadehouse described in the March, 1974 issue can easily be converted to a serviceable protected growing house by replacing the shadecloth with glass, fibreglass or plastic sheeting.

The variations possible are numerous and can vary to suit your environment and the extent of your orchid collection.

Iron or wooden framehouses can start as shadehouses, then you can add glass or sheeting on the side or sides of the prevailing winds, ultimately on the roof and remaining sides. Glazing bars can be fixed to iron with J-bolts, and roofing screws are suggested for wood rather than nails. With plastic sheeting glazing bars are not necessary. Eventually you will find yourself with a cool-growing house.

By lining this with polyethylene you can have a fully insulated house which can be heated if necessary or desired. For aspects of heating refer to previous issues of "A.O.R." from September, 1971 to March, 1973.

There are many intermediate stages between the shadehouse and the heated house. A relatively new development which can be extremely useful is the use of ultra-violet stabilised, reinforced polyethylene sheeting. This far outlasts ordinary poly. It is ideal for lining heated houses. It can also be used for lining shadehouses. It is strong and easy to handle, and if the edges are folded once it will take metal eyelets. Thus it can quickly be put up or taken down, enabling the side of a shadehouse to be windproofed as soon as seasonal prevailing winds make it necessary.

It can also be used to cover the shadehouse roof when plants are flowering. Cymbidiums, for instance, can be grown under shadecloth then protected from overhead rain as they commence flowering. This saves labour and the need for a special flowering house. It is

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Top left: Shading techniques that have proved reliable over the years are employed in these propagating houses at Geelong Botanic Gardens, Victoria. The glass has been painted with a water type paint which can be renewed each Spring. A roller slat blind is shown on the roof. In hot hours the protruding pole is twisted by hand so that the slats are laid along the pipe rails. Behind is a shadehouse made from venetian blind strips interleaved through wire mesh. These must run north and south in order that the sun and shadow creep across the plants all day. Degree of shade is controlled by spacing the slats. Battens can replace the blind strips but wider spacing is necessary to allow for the depth of the battens. Metal venetian blind strips have the disadvantage of being noisy in winds.

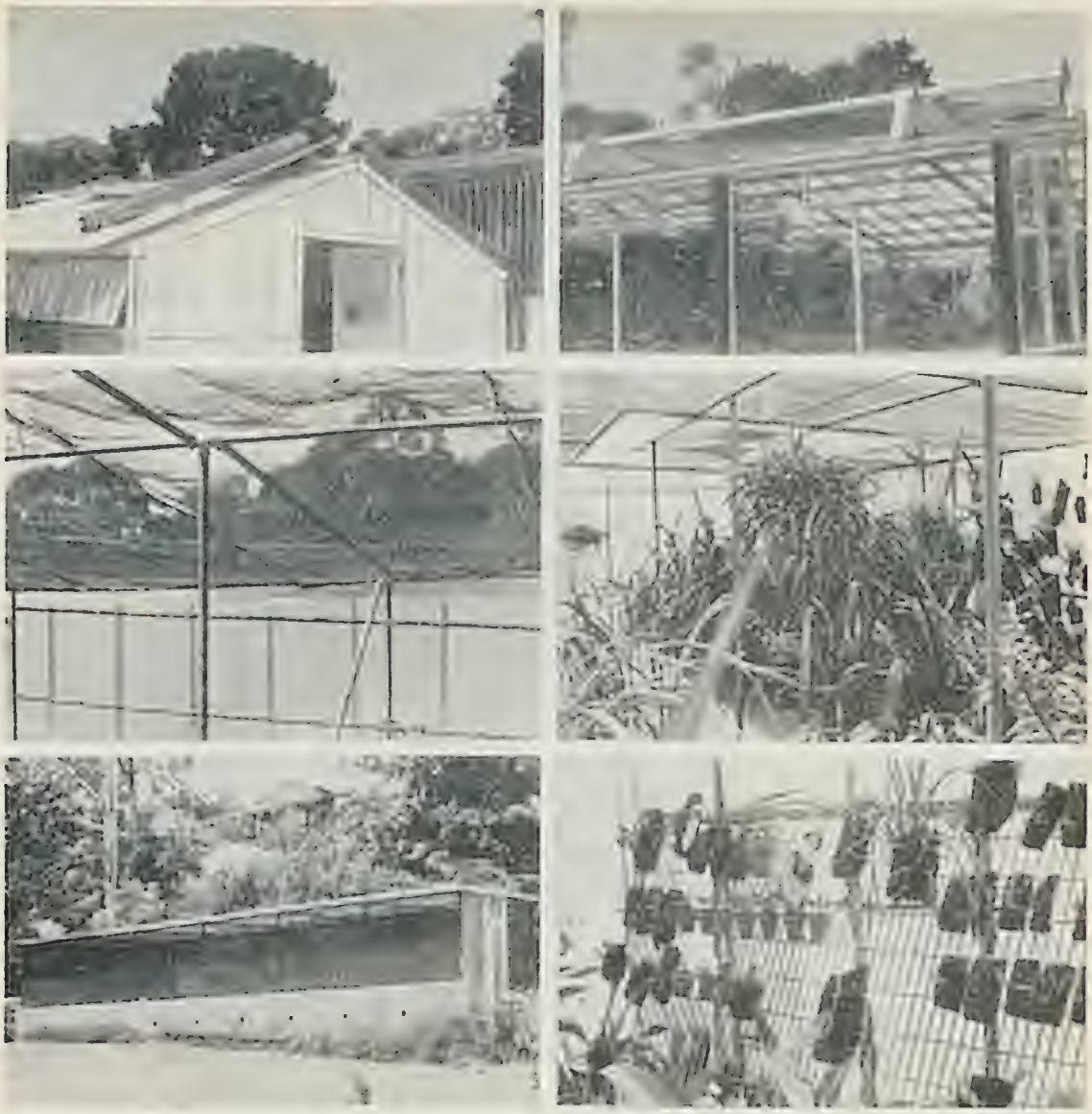
Centre left: A combination of plastic sheet sides and shadecloth top. Wire netting has been used to take strain off the shadecloth. The latter is loose to allow for shrinkage.

Bottom left: Mr. Dudley Parker's seedling house at Killara, N.S.W., utilises a plastic roof with shadecloth sides. This ensures controlled watering yet permits adequate air circulation, and, of course, the cloth tempers extreme winds and keeps out most insects.

Top right: A roll-up type pole which takes shadecloth up or down like a roller blind. This is the public display house at Geelong Botanic Gardens.

Centre right: Mr. Doug Symon's combination house at Beecroft, N.S.W. Note that the far corner is plastic sheet roofing as well as the sides. The roofing extends the range of micro climates and is used as a flowering area.

Bottom right: Welded wire mesh angled against a south wall takes the place of a bench in Mr. Symon's house. The angle conforms with the slope of pots so that the pot top is level when hooked on the frame. Slope of the slabs ensures water drainage is not too rapid. Two such meshes can be placed back to back on a pipe support to form an A frame.



Photos: Ronald Kerr

advisable for the roof to have a pitch of at least 30%.

Sarlon Industries market one such sheet that is reinforced and sold under the name "Polyscrim LX". I.C.I. market a line which can be used for large commercial houses. Both these lines will be described fully in a future article.

A grower soon learns that an ordinary shadehouse will not satisfy all his needs. He should plan at the start to provide additional shading in summer and additional protection during winter.

It is particularly important for a cool house or hot house to have some means of preventing excessive heat in summer. Plants can be killed or severely retarded at temperatures above 32°C. (90°F.). Indeed 27°C. is a safer maximum.

Glasshouses are painted or fitted with roller blinds for this reason. The ultimate is automated blinds or slats. In most cases in Australia the practice has been to paint glass in Spring with a water paint which will wear off by Winter, and to ensure a high humidity by damping down ash floors or ash covered benches. A mixture of lime bound with a very

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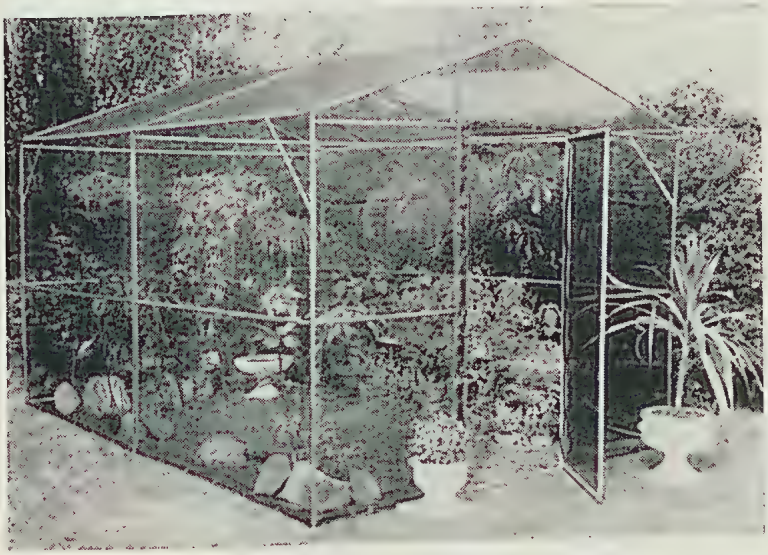
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Colan "Orchidshade" in a double role at Mr. Chas. Habel's cymbidium house, Terrey Hills, N.S.W. The second cover can be quickly pulled over when extra shade is necessary to prevent burning.



"Sarlon" shadecloth over a sturdy frame makes an efficient house. The frame corner posts are forced 30 cm into the ground. In a house like this benches are necessary for orchids and wire mesh, preferably 76 x 25 mm, is recommended. Mount it on a galvanised pipe frame joined with "Downey" joints.
The frame illustrated is available in kit form from an Adelaide manufacturer.

thin glue made from size makes an effective paint for this purpose.

In recent years evaporative coolers linked to thermostats have been coming into use. They are very effective.

Automation will be covered in a future article, but the point at the moment is that shadecloth has become a very valuable adjunct for glasshouse cooling. Best results are obtained by having the cloth on a frame over the growing house so that a layer of insulating air builds up between the cloth and the house roof.

The cloth can be removed or set up quickly. This is a necessary feature in a place like Canberra where the house illustrated is situated. In Canberra summers are hot and winters cold, and winter light is restricted.

Some modern glasshouses have rollers to wind up or run out of shadecloth. The old technique, and still good, was to roll wooden slats along the roof if weather conditions made it necessary. Both these devices are manual. They are illustrated by examples from the Geelong Botanic Gardens.

Also illustrated are examples of shadecloth in use, one illustration showing "Orchidshade" manufactured by Colan Products Pty. Ltd., and another "Sarlon" made by Sarlon Industries Pty. Ltd. "Sarlon" is available in six degrees of shade: 30%, 52%, 64%, 72%, 81% and 95%. "Orchidshade" is 30% and 51%, but Colan sells the other percentages under its "Colan" brand. Both are made in 183 cm width and 30 m rolls, but can be bought in smaller lengths.

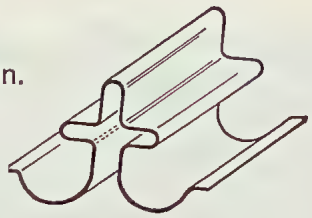
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Photo: Ronald Kerr

Mr. John Wrigley's glasshouse in Canberra. Shadecloth is used as an outer cover, virtually an insulating layer of cool air forms between the glass and shadecloth. A rigid pipe frame makes it easy to remove or set up the cloth — essential in a climate with extremes.

An interesting type shadecloth now available is Nylex "Trical", a non-woven plastic with holes allowing 50% shade. It is fairly rigid and easily handled but is only available in this one percentage, and in 120 cm widths. Rolls are 30 m long.

The point of this article is that a grower cannot think rigidly in terms of shadehouses or glasshouses. Shade is important for all houses, and glass is no longer essential for cool or hot houses. What is essential is to establish o p t i m u m minimum-maximum temperature range for those genera you wish to grow.

You have a wide choice of materials when it comes to housing your orchids. How you use them will depend upon your environment, your needs and your pocket. Planned development over several years is prudent, and above all do not let your immediate desires exceed the equipment needed to grow a genus well. Personally, I've lost more plants that way than their value in a small glasshouse.

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BOOK REVIEWS

"Gardening With Shrubs"

This book by Una van der Spuy has been specially written for gardens of the southern hemisphere. It is of value to orchid growers for two very sound reasons: First, a garden based on shrubs and lawns needs less attention than one depending on annuals thus leaving the grower with more time for orchids. Second, glass and shadehouses can be too stark and angular and strategically placed shrubs can soften the overall landscaping. Of course, the correct shrubs for effect and light control are essential and this book is a most helpful guide to selecting them.

The book offers detailed advice on climates, soils, fertilizers and maintenance. Charts indicate growing cycles and plant characteristics enabling you to work out your own landscaping layouts.

The book is profusely illustrated in colour throughout and the printing standard is a delight. As well as being a book full of practical ideas it is first class coffee table material that will delight any guest.

Both common and botanical names are used throughout and it is indexed under both sets of names. A small weakness is the absence of a picture index, but this is offset by the close juxtaposition of the illustration to its text.

This is a book every garden lover would wish to own. It would make an ideal Christmas gift.

Gardening with Shrubs by Una van der Spuy. Published by A. H. & A. W. Reed. Recommended price $16.95.

"The Bulb Book"

Do you remember the great tulip boom? A little before our time but we have had its more recent counterpart in this country with the cymbidium boom of the fifties.

During the tulip boom it was possible to buy a small share in a bulb, equivalent to about half an ounce weight, for around 5,400 florins. This must have been a fantastic price over 300 years ago.

One of the most interesting features of this book is the astounding amount of interesting historical detail it presents. Of course if you are only looking for the best in suggestions for planting around the glasshouse walls it has that too. It also has plenty of beautiful colour illustrations, and those not in colour illustrate important aspects of culture.

Chapters are given to each main group, Hyacinths, Narcissi and Tulips, Gladioli, Lillies, Dahlias and there are two devoted to "Rewards from 'Little' Bulbs". The decorative use of flowers is exhaustively covered.

If you wish to grow bulbs well this is a book you must have. Or make it a gift to a gardener friend.

The Bulb Book by Frederic Doerflinger. Published by A. H. & A. W. Reed Ltd. Recommended price $9.95.

WESTERN SUBURBS (N.S.W.) GOES SOUTH

Members of the Western Suburbs O.S. (N.S.W.) organised a coach trip to the southern tableland town of Bowral to see the tulips in bloom. Bowral is famous for its mass display of tulips in a park of about one hectare right in the centre of town. The tulips were at their best and presented a dazzling array of colours. The party lunched on top of the famous Gib which commands a breathtaking view.

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Hugo Freed Awarded High Honour

In this address Mr. William Eilau recapitulates the history of Orchid Digest Medal Awards.

The Orchid Digest Medal for Meritorious Service was awarded to Hugo Freed for outstanding service to the Orchid World. The presentation was made by William E. Eilau, a past president of the Orchid Digest Corporation, during the Nineteenth Western Orchid Congress in Portland, Oregon, 26-28 April, 1974. Hugo Freed was honored by a standing ovation. This award is made infrequently and only upon careful deliberation by the committee appointed by the President with the approval of the Directors of the Orchid Digest. The committee for this award consisted of Ernest Hetherington, Chairman, John Hanes and William Eilau.

THE PRESENTATION:

The Orchid Digest Medal for Meritorious Service to the Orchid World. This award was established by the Orchid Digest in 1955. It is the most distinguished award the Orchid Digest Corporation grants. The selection is made by a special committee appointed by the president. The recommendations are then submitted to the Executive Committee. Since 1955 six individuals and one orchid firm have received it. Tonight another person will join this honored group.

The first recipient was the late Mr. Robert Casamajor, who received the award in 1955. Mr. Casamajor was, for many years, the Editor of the *Cymbidium News,* one of the architects of the Cymbidium Society and surely one of the most influential persons in creating the popularity of cymbidiums which we know today.

In 1956, Mr. B. O. Bracey of Armacost and Royston was given this award. During the years he was Superintendent of Armacost and Royston and in later years Managing Director of B. O. Bracey & Company, he made an enormous contribution to the advancement of the quality of orchids through his hybridizing. Without the hundreds of splendid cattleyas such as Lc Bonanza, Lc Memoria Albert Heinecke and others which he personally created, our orchids would not be of the high quality they are today.

Several years were to pass until 1959 when the late Dr. L. F. Hawkinson was to receive this award. A medical doctor by profession, he loved his orchids and had an enormously inquisitive mind. His column "Ramblings", which ran in the Orchid Digest for many years is still remembered for its readability and the value of his comments.

One of the great orchid men of all time, Mr. H. G. Alexander, was to receive this award in 1960 at the Third World Orchid Conference in London. Regrettably, Mr. Alexander could not be present to receive it personally. In our Orchid Hall of Fame, Mr. H. G. Alexander as a hybridizer shall probably never be surpassed. *Cymbidium* Alexanderi 'Westonbirt' FCC/RHS, 1922, and *Slc.* Falcon 'Westonbirt' FCC/RHS, 1922; *Lc.* Lustre 'Westonbirt' and scores of other famous hybrids are the partial results of his skills.

For years Mr. Lester McDonald of the firm of McLellan's in San Francisco, was also the indefatigable secretary and seller of the *Orchid Digest* throughout America. Regrettably, the award came to him posthumously, but we shall remember the good work he did for the *Orchid Digest.*

The firm of Sander's of England and Belgium was to receive our award as an organisation in 1963 at the Fourth World Orchid Conference in Singapore. This firm for three generations and seventy-five years set a mark of contributions which shall probably never be equalled. When we read of any orchid with the name Sanderae, and there are many, or we browse through Sander's list of orchid hybrids, or are favored with a look at the volumes of *Reichenbachia,* we are seeing but a fraction of the enormous contribution this three generation firm made to the advancement of orchidology.

We must now go over to the year 1964, when the late Mr. Joseph Hampton was presented this award posthumously at the Tenth Western Orchid Congress. Mr. Hampton spent most of his life in commercial orchid growing in Western America. Perhaps his most lasting work was with the late Mr. Joseph Urmston in discovering and refining the techniques for controlling the flowering

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period of Cattleyas through light control. The well known exhibition purple, *Lc.* Joseph Hampton was named in his honor.

Once again a period of several years passed before the award was presented in 1968 to Gordon W. Dillon at the Thirteenth Western Orchid Congress, Executive Secretary of the American Orchid Society and Editor of their fine Bulletin. Mr. Dillon's



Left to right: *Hugo Freed, Dr. Maynard Michel and William Eilau.*

activities for over thirty years and his accomplishments are known throughout the orchid world. The idea of a World Orchid Conference to provide closer ties in the orchid world was Gordon Dillon's. He proposed this concept to the American Orchid Society Trustees who enthusiastically accepted it. Gordon has been instrumental in publishing the Orchid Hybrid Lists and the affiliation of over two hundred orchid societies with the American Orchid Society to name but a few of his accomplishments.

Now we come to tonight. Our recipient is being honored for what he has done in the hybridizing and popularizing of one of our major orchid genera. He is also being honored for his tireless efforts in lecturing on orchids throughout the world and for the many excellent articles on this hybrid complex which he has written for the *Orchid Digest* and the *American Orchid Society Bulletin.* He has been the General Manager of an orchid company for over twenty years. Though the lasting contribution of this person shall be for his hybridizing efforts as we have mentioned, he did found a now prospering Orchid Society at a time when the consensus was that it could not be done.

The recipient of tonight's award was a business man for many years, however, for the last twenty-eight years, while still a business man, he has worked with the hybridizing in Southern California of the East Indian Sarcanthids. The firm which he headed has received over five hundred awards in the last twenty-eight years on their orchids. Most of these awards have been to their Phalaenopsis. During the recent years of 1970 to 1973 their plants received one hundred twenty-nine awards from the American Orchid Society, including one FCC, 17 AM's, plus nine AM's and two FCC's from the Royal Horticultural Society in England. In 1971 the Royal Horticultural Society awarded this company the Westonbirt Medal for that year for the most outstanding orchid submitted to the committee. We cannot say that one individual or one firm can make the total contribution in the breeding of a hybrid complex, however, how the efforts of that individual increase the popularity of orchids as a whole must be a factor, such as via catalogues, articles and speeches. Yes, we can name many persons who have made notable contributions in the breeding of Phalaenopsis. But to name such hybrids as Princess Grace, Cast Iron

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Monarch, Peppermint, Red Fan, tells of the success in the breeding programmes by this man. The names 'Malibu' and 'Bonsall' have become famous throughout the orchid world. We must remember it is not the quantity of a man's work that is important in hybridizing, but the quality and lasting merits of his work that is the final proof. And now we can mention such world famous crosses and clones as Renee Freed, Beach Violet, Violacea 'Country Acres' AM/AOS, Grace Palm 'Easter Parade' FCC/RHS and literally hundreds of other crosses and clones.

Hugo for over a quarter of a century you have engaged in what we are sure was a labor of love — breeding of Phalaenopsis — though you have bred other orchids also. We believe you have made a notable contribution to the orchid world through the many finer hybrids in a great diversity of types. We believe that you have done much to popularise these "Butterfly Orchids" throughout the world and to show how they can be grown. We believe that you have written many fine articles for the *Orchid Digest,* have lectured on Phalaenopsis throughout the world and that you have made a notable contribution to Orchidology.

Hugo we know too that after the passing of many years, you are retiring to enjoy a little leisure and travel with your charming wife, Ella. Ella will you please stand and take a bow, then come and join us here on the speaker's stand. While you are still in good health and of sound mind and can appreciate an award such as this. Hugo, it is my great honor on behalf of the Board of Directors of the Orchid Digest Corporation to award you the Orchid Digest Medal for Meritorious Service to the Orchid World.

Congratulations, Hugo!

EIGHTH AUSTRALIAN ORCHID CONFERENCE

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Although time is short there could still be time for you to squeeze into the party. For further information contact Mr. W. R. Smoothey, 15 Merlin Street, Roseville, N.S.W. 2069.

YOUR GOOD DEED

Flood Victims' Thanks

The Editor,

So sorry in being so long in thanking all who gave orchids to re-establish our collections that were lost in the floods of January this year.

Only just now has my home been repaired of the flood damage. Because of the generosity of the people who donated orchids to our Re-establishment Fund, I will now be able to pursue my hobby of orchid growing.

First of all to the Committee of the John Oxley District Orchid Society and especially Les Lobley, I thank them for starting the Fund. Also, my many thanks to the following nurseries — Adelaide Orchids, Jim McKinney's, Barry Paget's, Sunshine, Wayside, Bob Nivin's and Kevin McFarlane's; and the following orchid societies — New South Wales, Newcastle Societies, Redlands, Eastern District, North Brisbane, Redcliffe, Darling Downs, Toowoomba and Mt. Isa.

To all the people who donated plants, I thank you on behalf of the 21 flood victims of the John Oxley Orchid Society.

Yours sincerely,
Laurie Baxter

NEW SOUTH WALES

Second Regional Conference

Newcastle Orchid Society was Host to nearly 100 registrants over the October holiday weekend.

Visitors saw superb orchids at the Kotara Fair Centre at a Combined Societies Show, although rebuilding operations had forced exhibitors to set up under cramped conditions.

Good fellowship flowed as registrants mingled at the smorgasbord dinner and colourful slide shows.

The lecture session was outstanding and some of them will appear in future issues. Stimulating, entertaining and rewarding was the verdict of all those present.

Tours to the Nelson Bay and Lake Macquarie waterways shattered any concepts of Newcastle as a grimy industrial city.

Monday's trip to the Hunter Valley wineries was a highlight climax to a wonderful weekend.

President Gordon Elliott, and hard working Secretary Norm Hellier, did wonderful jobs, backed by a wonderful committee comprising Treasurer Hugh Webb and Jean Latham, Griff Wrightson, Harry Bond, Steve Seymour and Elsie Seymour. Newcastle members were always there to help when the need arose. Thanks Newcastle and congratulations for a fine Conference.

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Around the Shows

Tasmanian Regional Conference Show

CHARLES TAYLOR

The most important function in the Tasmanian orchid calendar was of course the Devonport Show and the fourth Tasmanian Conference with 102 registrants. The Show was held in the Town Hall with all available space being taken up by displays, and this exhibition of orchid culture was more than comparable with many shows seen in Sydney this year.

A display of native Terestrials in bloom, benched by Mr. Peter Donelley, was an eye-catcher.

A number of mainland nurseries personally set up and displayed some award and other top-class blooms. *Odontoglossum* 'Florence Stirling' judged the best orchid of the conference show and Grand Champion of the Show. This beautiful plant was benched by Mr. and Mrs. P. Byers and was later granted an A.M.



Mr. L. Burke's *Coelogyne cristata*

The Best Specimen Orchid of the Show was *Coelogyne cristata* with over 100 blooms, owned by Mr. Lindsay Burke of Launceston, the winner of the Bronze Medal.

Reserve Champion *Cym.* Mary Ann 'Simplicity', owned by Mr. W. Wilson, also winning Best Cymbidium for Form and Colour.

Mr. R. Hodgens of Melbourne won Champion Cymbidium of Conference, also Champion Cut Flower with Wallara 'Gold Nugget'.

Also winning Best Best Three Cymbidium Distinct Colours with *C.* Wallara 'Gold Nugget', *C.* Sensation 'Kimberley' and *C.* Borough Green 'Conference'.

Best Cymbidium Seedling of Show was won by Mr. and Mrs. P. Nicholas with Marion Lenfesty 'Splendens' x Ralaro, a flower very much like its famous parent. Novice Seedling, Dorana 'Dalsman' x Snowsprite, was owned by Mrs. Ruth Bartlett, a lovely heavy textured yellow.

The conference held on Saturday 12th was a great success with 110 registrants and friends being present. The papers and their presentation with colour slides was excellent, interesting and instructive without being too technical.

Again, Mr. Peter Donelley's paper on Terrestrial Orchids illustrated in every case by the flowering plant, was very well received. This could be the first time our native orchids have been shown to their best advantage.

Burnie Show

CHARLES TAYLOR

The Burnie Society used their Town Hall as a venue for this year's show. The hall was attractively arranged with displays all around the walls and three island ones down the centre.

In the displays the words "Most Original" were used and this section was won by Mr. J. Cannon with a six square metre display.

The most outstanding display of the show was won by Mr. Barry Dudman. A very fine exhibit with quite a number of different genera on display.

Once again Mr. Phil Byers *Odontoglossum* Florence Stirling 'Duchess' won Grand Champion of Show.

Mrs. Ruth Bartlett was successful in winning first and second place for Cymbidium Seedlings.

In this show, more than the two previous ones, the section for Floral Art was well supported with attractive displays.

ORCHIDS WHERE?

CHRIS NICHOLAS

This was the theme of the Tasmanian Orchid Society Spring Show held October 4-6, 1974. With Mr. D. Morgan of Melbourne acting as judge.

Once again the Show was built around displays staged by individual growers, this year attracting a record 22 entries and the theme "Orchids Where?", depicting towns or places in Tasmania, proved a very popular one. The gratifying roll-up can be attributed largely to the increase in popularity of orchids in Tasmania and the resulting influx of new members.

The showroom at Motors Pty. Ltd. (Tasmania's Holden Distributors) is ideally suited for staging an orchid show and the quite large display area was effectively broken up by the use of strategically placed zig-zag screens. These in turn formed back drops for some of the smaller class displays allowing better utilisation of available space.

Grand Champion went to Cym. Gwen Sherman 'Arthur Fetzer', grown by Chris and Phyl Nicholas, who also took off Champion Display. Reserve Champion Cym. Loch Lomond 'Mem. J. B. Russon', was exhibited by novice member Mrs. Fay Roy.

Our Show Marshal Jack Longden, must be very pleased with the overall success of his effort and the sizeable donation which will, once again, be received by the Tasmanian School for the Blind and Deaf.

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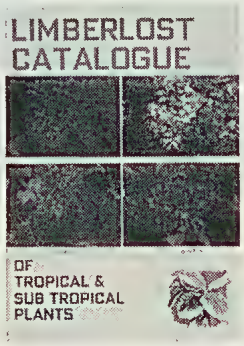
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SOUTH AUSTRALIA

Spring Festival

The Orchid Club of S.A. Spring Orchid Festival was once again held in the John Martin Auditorium. Once again the John Martin artists excelled themselves by providing an exotic atmosphere, this time around the theme "Orchids in the Emperor's Garden". Fortunately the garden was not restricted to the Emperor's ladies and its appeal to the public may be gauged from the fact that 31 new members were enrolled.

The John Martin Cup for the Most Outstanding Bloom of the Festival went to Johnston Orchids for a magnificently flowered *Phalaenopsis* Hermosa 'Highbury'. Champion Cymbidium was *C.* Valya Craig 'Hackham' grown by Mr. L. Poole. Mr. G. C. Poole's *C.* Balkis 'Compact' was Reserve Champion Cymbidium. A clone about which more will be heard was the one awarded Best Cymbidium Seedling in the Open Division: *C.* Pearl Balkis 'Majestic'. With a more robust spike it should verge on championship class.

WEST AUSTRALIA

Spring Show

Some enthusiasts travelled all the way from Bunbury to exhibit at this Show held at Garden City, Booragoon. The result was a "Bigger and better Show than ever before". Champion Cymbidium was Mr. J. de Lacey's *C.* Featherhills 'Heritage', with Mr. and Mrs. L. Gale's *C.* Del Rosa 'The King' as Reserve Champion.

Members worked hard at setting up and manning the Show. There was great public interest in orchid corsages and this kept the clever fingers of lady members and a few men — busy throughout the Show. It was a Show that everyone enjoyed.

LATE SHOW A BOON

Once again the Five Dock O.S. (N.S.W.) proved that September is not the only flush-flowering month: if anything, there is more variety in mid-October. Softcane dendrobiums were at their best and cymbidiums still dominant. Grand Champion Cymbidium was *C.* Dr. Lloyd Hawkinson 'Piedmont' owned by Mr. W. Hughes. Well flowered, this must surely be the best green cymbidium around. Reserve Champion Cymbidium was *C.* Nicky Anne 'Karandra', nicely grown by Mr. and Mrs. Waldie. The Champion Dendrobium was *D.* Ann Marie 'Evonne Olive' belonging to Mr. R. Morris, a clone which has gained an HCC award. A large display section was won by Messrs. Jones and Bisset, and the small display section by Mr. and Mrs. Cardwell

WORLD OF ORCHIDS 1974

Melbourne Eastern O.S. held their Spring Show "World of Orchids 1974" at the Chadstone Auditorium. Public response to the very attractive show was warm, indicative of the hard work put into the show by members.

This seems to be a good year for *Lycaste* genus, the Champion being a *L.* Koolena with five huge flowers of dramatic colour, a sister plant to the O.S. of N.S.W. winner.

There were several fine displays by members, with McBean's taking First honours, Mr. K. Bruce, Second, and Third Messrs. D. Morgan and B. Clark. Honours for smaller displays went: First, Mr. L. Vines, Second Mr. J. Brighton, Third Mr. S. Lone.

An orchid which aroused much interest was Mr. Noel Lock's *Cattleya skinneri,* a magnificent specimen with at least fifteen spikes with four rich magenta flowers on each — a worthy winner of the A.O.C. plaque for the most pre-eminent entry.

NORTH BRISBANE ORCHID SOCIETY

Toombul Town shopping mall was the venue for this society's spring show — a large spacious area with plenty of room, good lighting, quality appointments, making an ideal setting for orchid blooms.

A centre rostrum carried the entries of the individual displays — this section was won by a fine display of Phalaenopsis, entered by Mrs. T. Butler.

The Champion Orchid of the show was *Blc.* Crispin Rosales — three nice blooms, well presented, by Mr. J. H. Thomson, a visitor from the West Brisbane Society.

This Society meets on the 4th Thursday in the month at Boondal. Secretary: Mr. Tom Butler, 333 Thistle Street, Gordon Park. Phone No. 57-2858.

THE REDCLIFFE DISTRICT O.S. — Qld.

A spectacular spring show portrayed the founding of this area 150 years ago (1824-1974) to the present era. An aboriginal gunya with models and artifacts stood in a bushland setting covered with a variety of flowering native orchids, whilst nearby, popular hybrids of today were well displayed in a setting showing the Redcliffe Peninsula as it is today with its fine roadway bordering the waterline and models of many activities.

Dr. and Mrs. Channon had gathered the red soil for which this area is noted, to use in the background of their display.

Many compliments must go to the President Mr. Frank Soady for his display "Alice in Wonderland", the story being conveyed right through this Wonderland of Orchids by models he had made — this society is fortunate in having such an artist.

Champion Orchid of the show went to *Den.* Model 'Magnificia' x Anne Marie 'No. 18' — owner Mr. Flem Jorgensen.

The Society meets the 2nd Wednesday in the month, C.W.A. Rooms. Honorary Secretary: Keith Howard, Long Street, Clontarf 4019.

IPSWICH ORCHID SOCIETY — Queensland

Spring Show

One can always look forward to seeing a show with just that unusual touch at Ipswich, for with artist and Past President Pino Zerlotti, if it is anticipated there will be a scarcity of genera on display, this can be rectified by including same in the general decor. This year with the scarcity of cattleya blooms in the area, Pino made large models of Cattleya Orchids to cover the windows throughout the building, this was most effective appearing as they did between the large displays. The Champion Orchid of the show was *Cym.* Balkis 'Lyath' — owner Mr. D. R. Matthews.

The Society meeets the 1st Wednesday in the month in the Senior Citizens' Rooms, Ipswich. Treasurer: Mrs. Brown, High Street, Ebbewvale. Phone: 82-2204.

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The Toowoomba Orchid Society's Spring Show

ELSIE MILES

The Toowoomba Orchid Society chose a Japanese setting for their Spring Show, held at The Myer Rooftop Car Park during The Carnival of Flowers Silver Jubilee.

The entrance was through a brick-red Torii gate flanked by an Ekebana arrangement of orchids, and a pear-shaped rock garden of miniature cymbidiums. At the end of this, a Japanese lantern glowed brightly. The centre attraction was a Shinto Shrine which housed a miniature Buddhist Altar, on which was a Buddha in bronze. Around the shrine were miscellaneous orchids.

The Grand Champion Orchid of the Show was *Cymbidium* Etta Barlow 'Cabramatta' x *C.* Lunagrad 'Elanora', owned by Mr. Terry Reis.

Cymbidiums in three-deep terraces filled the perimeter of the area.

The novice section was like a fairy wonderland. Suspended from wire mesh, with colours ranging from the brown, purple and white of the *Phais tancarvillae* to the yellow, mauve, pink, cream and white of dendrobiums, they formed a delightful background to the playing fountain.

Flowers of sweet orange blossom (*sarcochilus*) and many other native gems filled the stones and fern in the foreground, while their fragrance wafted over the whole area.

The Reserve Champion was *Cymbidium* Mazatlan x Irene Celeste x Carisona, owned by Mr. R. Gilliland.

EASTERN DISTRICT SPRING SHOW — Queensland

This was one of the many societies in the metropolitan area who staged their spring show over the weekend. It proved quite fruitful financially.

Champion Orchid of the show was *Ascda.* Sam Rit — owner Mr. F. French. This ascocenda was greatly admired for its rich royal blue colouring, and shapely blooms.

Mrs. Lynne Williams won the entry for an arrangement of six-plants. A display of well-grown quality plants, artistically presented, in tone complete with script and mural.

The Society meets the 4th Thursday in the month in the Guardian Angels School Hall, Bay Terrace, Wynnum South.

CASINO ORCHID SOCIETY — N.S.W.

Junior Wins Cultural Prize

Miss Suzanne Saunders is just fourteen but proved she knows how to grow orchids when her *Cymbidium lowianum* was judged Champion for Culture at the Casino and District Orchid Society Spring Show.

Champion Orchid of Summerland was a Softcane *Dendrobium* Ann Marie owned by Mr. and Mrs. E. Oliver. Other outstanding orchids were Mr. Frank Smith's *Cym.* Featherhill 'Heritage' and Mr. Doug Campbell's *Slc.* Jewel Box 'Dark Waters'. Champion native was a *Den.* Bardo Rose owned by Mr. George Hobbs.

Judges Mr. Cliff James and Mr. Maurie Noble commented upon the high quality of exhibits.

Members worked hard to achieve a rewarding show. Treasurer Mr. Gary McAteer deserves praise for his Championship wins at Lismore and Ballina Shows with *Cymbidium* Buxom 'Betty Dawn'.

Intending members or visitors to Casino should contact the Secretary, Mrs. Norma Anderson at South Pharmacy.

Australian Native Orchids

Most Epiphytic orchids are easily established by tying them firmly to treefern fibre. If one collects his own fibre, cut it into large enough slabs so that the plant will have many years of growth.

The slabs should first be soaked in lime water for a day or two, and then allowed to dry out to make sure it is acid free.

Before tying on the plants, the fibre slab should again be soaked in water to which has been added a few drops of Formula 20 (to promote root growth) and then while still wet, tie on the plant and hang in a cool spot until the roots have begun to penetrate the fibre. Fishing line or a plastic covered bell wire can be used for the tying, but avoid using bare wire as it gets hot in the sun and can easily burn your plant.

Pots and other containers can be used also, providing they give good drainage — a must for all orchids.

You have only to go into the bush to see the type of mixture you will need. Some natives grow on rocks with the root system lightly covered by leaf mould, burnt sticks and other debris, and generally in full sun.

Depending on the type, others grow on the trunk of a tree or high up on a branch, some low down near the ground.

Mossy rocks down in a gully where the sun rarely reaches are a host for bulbophyllum, some types of sarcochilus and even some of the dendrobiums.

Therefore, a very simple mixture of leaf mould, charcoal, peat moss and chunks of sandstone is all that is needed for the pots.

The exception of course is the native cymbidium which does best in cymbid. mix.

Maybe the best way to grow your natives is to establish them on the trees in your garden. They look more natural and add that little bit of glamour to your garden.

They can be established on any type of tree except the bark shedding varieties.

Keith Edwards in Blue Mountains O.S. Bulletin

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My Top Ten Cymbidiums

RAY DEAN

Well, the Cymbidium season is now well into what I call the hectic bit, i.e. the potting up and breaking up or potting on to a bigger size pot, this tends to tire one out after making up compost consisting of ½ bale of peat moss, ½ bag of styrene foam, three barrows of coarse sharp river sand and two chaff bags of casurina needles, plus blood and bone, and dolomite seven pound bags of both.

I began to think what cymbidiums I would grow if I was limited to ten to fourteen varieties that are capable of winning on the show bench and are readily available from various sources. I would like three plants of each —

C. Balkis 'Compact', AM/AOC-SAOC-AOS. *White,* carries up to 14 flowers per spike.

C. Balkis 'Captain Anderson', AM/OSNSW. also carries up to 14 flowers on an upright spike.

C. San Francisco 'The Beat', AN/OSNSW. A polychrome, this flower has probably won as many shows as any orchid over the last five or six years.

C. Anita 'Janice', HCC/AOC-NSW. Another polychrome with a nice arching spike that probably had been as successful as *C.* San Francisco 'The Beat'.

C. Burgundian 'Bexley', HCC/AOC-NSW. This orchid is probably one of the best round shapes, a pink which was seen to perfection last year.

C. Doctor Lloyd Hawkinson 'Piedmont', HCC/AOC-OSNSW. A green, was Reserve Champion Cut Flower at the 2nd Australian Orchid Conference, and Reserve Champion at the N.S.W. Spring Festival 1973.

C. San Francisco 'Meadow Mist'. This is a tremendous green, can win Champion or export sections in any Show when well flowered.

C. Borough Green 'Conference'. Another green, this is probably the best green for the coloured section and it would be quite possible for it to win the top prizes in a suburban Show.

C. Barcelona 'Magic Wand'. I put this one in as it is one of my favourites. It is another green which will win export sections or decorative sections. I have had 21 flowers on the spike. It was granted an Export Award by the Orchid Society of N.S.W. Ltd.

C. Wallara 'Golden Ball' or *C.* Wallara 'Golden Nugget'. Two yellows which I could not separate as to which one I would personally have. I have both plants but have yet to see *C.* Wallara 'Golden Nugget' flower for me.

There are three other plants I would like to have also as I think they are orchids which have proven themselves over the years —

C. Mary Ann 'Simplicity' AM/AOC-OCSA. White.

C. Balkis Kiwi. White.

C. Joyce Duncan 'Susan Hughes' HCC/AOC-OSNSW. One of the best shaped greens I have seen and now available freely.

All the orchids which are mentioned may not be everyone's choice but if we all grew the same orchids it would be a dull time visiting each other and going to the Shows.

After the daydream of only having 30 or 40 orchids, I had better finish doing the potting. Ah Well! — only 600 to go!

17 Raym Road, Kenthurst, N.S.W. 2154



Coelogyne cristata

The Queensland Orchid Society awarded a Certificate of Cultural Commendation to the grower, Mr. A. Allison, 18 Wentworth Street, Toowoomba.

This particular plant carried 200 blooms, all in good condition, likewise, the foliage was without markings and discolouration.

Mr. Allison advises that when he first obtained this plant it did not seem to grow rapidly, however, after having placed it in a hanging basket about five years ago, it has flowered annually.

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(PICTURED OPPOSITE)

A cross of Sussex Dawn 'Dorothy May' x President Wilson 'Concolour' made by Dudley Parker of Killara, N.S.W. This cross has consistently produced pure coloured Cymbidiums, with Araluen 'Fantasy' possibly the best we have seen, but all the offspring have been good blooms borne on good long spikes from big bulb plants that are all good growers.

When the cross was first made my interest was for green Cymbidium flowers in September, when they are scarce in Sydney. The first to flower came in mid-June and was a 5" apple green with a white lip, but they bloom anytime from June to late September. Araluen 'Fantasy' blooms in mid-August and the lovely green in the flowers is much more pronounced when flowered with a great deal of sunlight, the contrasting orange lip is most attractive.

The Araluens (Diploids) are good breeders and we have used these extensively in our breeding programme.

Not many of the first cross were raised to flowering size, so we have re-made the cross using the original parents, mainly because 98 per cent of those flowered have been non-staining.

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